Advanced Authenticated Multipurpose Robot

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Abstract

Today robotics is not any longer limited to laboratory experiments; they need found their way into our day to day life. Being a physical entity itself. Several design ideas have been explore and are presented in an attempt to maximum the user awareness of the robot's interaction with the environment. They are made to small and compact size, enough easily transport.

This is handling by the controller software Apps and we are using module for the purposed of the interfacing of android mobile and system. In future camera is used to capture information surrounding the robot. This system is IOT based and there is mobile application available which will communicate with system and then will operate the function user wants like forward, reverse, left, right.

Keywords: - Smart, Sensors, ESP8266, Cloud computing.

I. INTRODUCTION

Robotics is a branch of engineering and science that includes electronic engineering, mechanical engineering and computer science and so on. This branch deals with the design, construction, used control robot, sensory feedback and information processing. These are some technologies which will replace human and human activities in coming years.

These robots are designed to be used for any purpose but these are using in the sensitive environments like bomb detection, deactivation of various bombs etc. Robot can take any form but many of them have given the human appearance.

II. LITERATURE SURVEY

Back in 1923, brilliant Swiss-born architect Le Corbusier (1887-1965) described a house as "a machine for living in" and slowly, during the 20th century, that metaphor turned into reality.

First, the arrival of convenient, electrical power began to strip away the drudgery from all kinds of domestic chores, including washing clothes and dishes and vacuuming the floor. Then, when transistors made electronics cheaper within the mid-20th century, appliances began to control themselves during a very limited way, using built-in sensors and programmers. But it's only now, within the 21st century, that the vision of the fully automated, smart house is actually being realized. Due to the web, it is easy to line up virtually any electric appliance in your home so it can control from an internet browser anywhere within the world. And, before for much longer smart home is one during which the varied electric and electronic app all types of net-connected machines are going to be lecture each other , running far more of our lives automatically which is understood because the Internet of Things.

N. Sriskanthan [1] has implemented the model for home automation using Bluetooth via PC. But, Bluetooth has range limitation.

Hasan [2] has developed a telephone and PIC remote controlled device for controlling the devices.pin check algorithm was wont to implement the system where it had been with cable network but not wireless communication

Amul Jadhav [3] has used universal XML format to style automation system which may be easily ported to the other mobile devices.

R.Piyare [4] has introduced design and implementation of a coffee cost, flexible and wireless solution to the house automation. Jitendra R. implemented a system with the ZigBee network

and showed the way to eliminate the complication of wiring just in case of wired automation. I. Methodology

After the detail

Literature survey through the book, periodical, journal, magazine, websites. The idea of the project is well defined. The logic springs from the intelligence of the robot. It is programmed and burn it to the Aurdino by using the software aurdino. The accuracy and viability of the program and electronic components is tested within the simulation software. After the successful simulation result it's implemented within the hardware. After the finishing of V. Programming, electrical, electronic parts, the stable VI. Reliable, and versatile mechanical design and fabrication is completed. Finally system is tested and encountered error is omitted. In advanced to the market the robot square measure VIII. Additional enforced mistreatment the new technology like GSM, GPS and alphanumeric displays. The GSM technologies will operate the automaton from the way distance and that we can find. IX. X. XI. XII. XIII. XIV. XV. XVI. XVII. 1) ESP8266 Controller: § Processer: L106 32 bit RISC microprocessor core § 32 KiB instruction RAM and instruction cache RAM § External QSPI flash: upto 16 MiB is supported. § Micro USB connector for power and debug § I^2C software.

Internet Of things Examples Exosite § Uses Cloud services to regulate the ESP8266 from a remote location § Uses Cloud services to gather sensor and site data from the esp8266 from a foreign location. B. Installation and Configuration: § Will got to flash the ESP8266 Launch pad with the binary available on § Alternatively the ASCII text file for the aurdino IDE Launch pad application is out there on github. § You'll got to visit exosite side and check in, at which stage you'll add a replacement device § The Exosite Cloud service uses code address as an identifier; you'll got to provide this when adding a replacement device. D.Features of ESP8266: § Low cost, compact and powerful Wi-Fi module. § Power supply: +3.3V only § Current Consumption: 100mA. § I/O Voltage: 3.6V. § I/O Source current: 12mA. § 512 KB non-volatile storage. § Supports Deep sleep.

§ Support serial communication hence compatible with many development platform like Arduino § are often program using Arduino IDE XVIII. Diagram XIX. OPERATION The IOT's smart home consists of ESP8266 Simple link Wi-Fi Launch pad. The main advantage of this launch pad is that it's industries first Wi-Fi certified device so we will fulfill our IoT application.

Because this Launch pad has inbuilt Wi-Fi alongside cloud computing. The cloud computing evolution, supported by a rise in storage capacity. This launch pad works on the three .6 to 3.8 v power. During this paper we are getting to achieve smart home using following sensors which are interfaced to ESP8266 Launch pad through Wi-Fi. It is wireless controlled robot here we've tendency to area utilize the thought of GSM communication and this robot is controlled by mobile using blynk app.

The system involve 3 phase: Authentication, process, action. Generally the sensors are mounted on robot and therefore the process is finished by the on board microcontroller. With the assistance commands we'll move our robot in desired direction as per our need. Once the command is received by the robot it follows the command and perform the task as per demand once the user pushes movable keyboard buttons command is transmitted that's received by robot. The device technology are utilized within the field like area exploration whenever human access is troublesome

1. Power Supply: a tool or system that gives electricity to associate in nursing output load or cluster of masses is named as electromagnetic unit.In our project system +5v dc provide is required for microcontroller.

2. Mobile unit: this unit will receive the commands from the mobile if we've to work the robot.

3. Ultrasonic sensor: as name indicates, ultrasonic sensor measure distance by ultrasonic waves. The sensor head emits an ultrasonic wave and receive the wave reflected back from target and it measure the space.

4. Temperature sensor: it's used for sensing the temperature of that area.

5. Motor driver circuit: which allows DC motor to drive on either direction. it's 16 pin IC which may

control the 2 set of motor simultaneously in any direction it means we will control two set of dc motor by single driver circuit.

6. GPS: Global positioning system which doesn't require the user to transmit any data and operates independently of any telephonic or internet reception. It provides critical positioning capabilities to military ,civil and commercial users round the world.

III. HARDWARE

1. Microcontroller

2. GPS Module.

3. Metal sensor.

4. Wifi Module.

5. Grove Temperature Sensor.

6. Ultrasonic sensor. Ultrasonic sensor XXI.

IV. SOFTWARE

i. Integrated Development Environment (IDEs) & Compilers: § Code Composer Studio v6 § Energia and Embed X-code-Based on Wiring and arduino frameworks

ii. Operating systems, SDk and Muxing Tool: § TI-RTOS and FreeRTOS § CC3200 Software Development kit (SDK) § Pin Mux Utility for ARM Microprocessors

iii. Application and Firmware Flashing: § UniFlash for cc3200 § Provisioning and configuration § Simple link iOS and Android Apps § Web based configuration.

iv. Testing: § Simple Link Wi-Fi testing tools

V. APPLICATIONS

i. Military.

ii. Agriculture.

iii. It is wont to detect metal like bomb.

iv. it's also wont to detect the thing . XXII.

VI. ADVANTAGES

i. Adds Safety Through Appliance.

ii. Secures Home Through camera and Wi-Fi control

iii. Robots are more accurate and powerful than humans.

iv. Save time

v. Save money and increase convenience Allow to appliances control when out of town.

VII. CONCLUSION

The most aim of this paper is to explaining the monitoring method used to operate the robot with the assistance of android phone we will monitor. The circuit assembled on the PCB. Check when switched on system the message displayed on LCD display or not. If the system is functioning properly then we'll get output on Blink application. The GPS receiver details were checked. Finally the controller takes a choice and provides command to motor driver so as to drive the motor in several directions.

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