Live human detection robot

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Abstract— **During war times it is difficult to check whether the soldier is dead or alive at crucial movement. And also, when a natural disaster happens it is crucial to implement the plan to save the people who will be needing help into action. The Live human detection robot helps in those crucial times, it enters to the places which the human or bulk machines cannot enter and identifies whether the person is dead or alive.**

Index Terms: **Robot, Remote controlled, Health Monitoring, IoT.**

I.INTRODUCTION

In the current era, natural disasters like Earthquakes, Warfield's, building collapse or manmade disasters often occur and they cannot be controlled or stopped. Where this disaster has occurred it's quite difficult for rescue teams to coverSince the area is quite bigfor rescue workers to cover it. We are developing using aArduino uno microcontroller and some set of sensors which is PIR sensor, Ultrasonic sensor. PIR senses the temperature of its environment and checks for any changes that are present. The Ultrasonic sensor are used for navigation of the robot vehicle in the disaster affected area. This robot can be used for long and short distance hence we are using GSM module for communication purpose and we are using DTMF dual tone multifrequency for communication for robot control, this robot is more helpful for rescuers to find and save live human being.

II. LITERATURE REVIEW

[1]   In this paper titled, "A design of human detection robot using sensor" It is mainly based on AT89C51 micro controller. They had considered the robot has two section transmitter and receiver section has two section transmitter and receiver section. In transmitter section the robot can be controlled by using remote. If remote fails to control they have another option to control that is pc, usually they can operate in manual and automatic mode, In manual using RS232 logic they will give commands in automatic mode the robot will navigate automatically. From RF receiver it will receive the signal based on commands it will trigger on way, If any human body is present the PIR sensor will detect him, for safety purpose they had connected gas sensor & fire sensor, and then wireless camera had mounted on it, for every few minutes it sends photos and videos.

[2]   In this paper titled, "Alive Human Detection Robot for rescue operation", The system is controlled by Android app application. From the mobile device they will send commands to the raspberry Pi. In Robot they had mounted the camera to see live stream. they had used microwave radar sensor. From this application If any object come across the radar sensor or Any changes happens across the radar sensor it will automatically alerts the use. from its radius. Ultrasonic sensor will measure the distance from changes which has happened at that place and they had used temperature sensor. By checking the temperature of human body. they will get to know he is alive or not.

[3]   In this paper titled, "Human Detection Robot for Disaster Management", They have made the project simple and economically less. This project is based on Arduino Uno ATMEGA 328P. The power supply is 9v. When human body presents around 30ft from the passive infrared sensor it will alerts the user by sending signal to the Arduino. Then buzzer will on and LED starts glowing. The LCD 16X2 displays the message "HUMAN TRACE DETECTION".

[4]   In this paper titled, "RF Controlled Alive Human Detection Robot" In this paper a rescue robot is designed for the purpose of rescuing people such places like wildfires, tsunamis, earthquakes, collapsing buildings and victims trapped and many such situations and human made disasters such as

Chernobyl or 9/11, There is also case the issue of deaths caused due to untimely hospitalization of victims. In this project their aim was providing aid for rescue operations in calamity hit areas maybe natural or human. This robot will will be able to detect live humans or animals and immediately inform the concerned authorities with the location finding humans easily and more effectively. Radio Frequency robots are controlled using rf signals of different frequencies depending on the ranging frequency. Hence the name Robots are used for a spectrum of applications, including in automobile industries, healthcare, surveillance and in space. The RF controlled robot is basically a mobile robot which can be controlled using rf signals. It is sent into the disastrous area and every time it detects an alive human (or animal), it sends a location to the control centre after which, the rescue workers can resume operations. For this robot components are used RF Transmitter – Receiver, PIR Sensor, LDR Sensor, LED, GSM, GPS Conclusion In accordance with the objective of this project which is used to enable the robot to detect a live human and perform the rescue operation by sending current location to the authorities who will provide help. This project helps to contribute in rescue operations where areas of natural and man-made disasters to perform the tasks. The project is low-cost compared to the loss of human life and high-tech robots that consume space. The design is simple to understand and implement. It provides control to the operator apart from being semiautonomous. As a future scope, solar batteries can be installed instead of the rechargeable lead acid battery we are currently using. The robot can also be enabled to send location without use of GSM as some network providers may not have their towers and switching centres at all locations. We have tried our best to make the robot cost-effective – by using components that readily available, safe – the live feed enables us to view any damage made to the robot, and efficient – as it sends messages to rescue centre with location to help out the human.

[5]   In this paper titled, "IoT Based Rescue Robot for Alive Human Detection and Health Monitoring System"In this paper they had built the robot using Arduino mega 2560 the main aim of the system is to detect the alive human beings in natural an man-made disasters like earthquakes, cyclones, floods, etc. Firstly, the robot moves in the open field in the disasters area to find out the affected live human being. camera is used to the sends live video continuously. The Passive infrared sensor is used to find out whether there is any motion in human beings in disaster area. If there is any motion in human beings then the affected person has to place their finger on the sensors so that the pulse rate and body temperature could be measured by the following pulse and temperature sensor. GPS sends the location of the area. The main objectives of the system is to find out the alive human being as soon as possible so that the person's life can be saved. 2. implement alive human detection robot based on IoT. 3. To design, build, and test a robot that moves autonomously. 4. The main purpose is to detect alive human beings is done by PIR sensors.

[6]   In this paper titled, "IOT based live human detecting robot for earthquake rescue operation" This is paper they used the micro controller PIR, DC GEAR MOTOR, INTERNET OF THINGS (IOT), MAX 232 IC, this robot mainly build for the save sensor disaster here they have connected PIR sensor to detect if person present on the area or not they had used microcontroller pic 16f877a to make automation. Easy to the Bluetooth module were installed in it. From this they will get information.

[7]   In this paper titled, "Alive human detection robot for rescue operation" Disaster like earth quakes, bomb explosion and floods often cause loss of precious human lives during such emergently situation and especially in urban disaster in order to prevent loss of life and property, various essential services like policemen, fire fighter and medical assistance etc., according to the field of urban search search and rescue (USAR) the first 48 hour of the rescue operation hence to make a rescue operation more safe and effective robot has been proposed which detect alive human being and wirelessly communication with the rescue team.it can be used in areas where rescue is needed ,the robot sense the human body temperature using PIR sensor which gives the information about the presence of alive human body and message is sent through rf transceiver using wireless mobile. This project deals with live person detection robot is based on p89v51rd23n microntroller this robot follows which is drawn over the surface here we are using PIR sensor for detect the human. This project is mainly used in the earth quake rescue operation internally is

consists of IR sensor. The IR sensor are used to sense are used in this earth quake rescue operation internally is consists of IR sensor. The IR sensor are use located it immediately gives audio alert visual alert to the authorities, so that help can reach the live person faster, all the above systems are controlled by the microcontroller, the microcontroller is used to signals from the PIR sensor and it drives the motors according to the sensor inputs, two DC motors are used to drive the robot, the micro controller is programmed to send the live human information to remote control place through the RF transceiver

[8]   In this paper titled, "Microcontroller Based Tracking System" For the Detection of Human Presence In Critical Areas", In this model they had built the robot using 8-bit Microcontroller AT89C51. The user can control the robot by using the RF remote control. The RF receiver section is connected to the robot. If we should send any command to the robot. In remote there will be HT12E which encodes the parallel data into serial data. In receiver section there will be HT12D it will convert into parallel data. In robot they have connected infrared sensor. by alive human temperature will be 96 degrees from the body temperature it will give alerts signal by buzzer sound.

[9]   In this paper titled, "Human Detection Using Wireless Robot", There are various type of situation where a person cannot go to check or help or to talk a specific action on those points of, we can use the robots then we can solve any problems or save lives. They designed a system which they can receive signals and give it to microcontroller by decoding it so that controller can drive the robot and there must be a transmitter which can send the commands to the robot vehicle. So, we are designing a system in which we can send commands wirelessly and that will be received by the robot system and as per the commands robot will be driven.

[10]   In this paper titled, "Human detection robot" In this paper, they are designed and implemented a live human detection robot through IoT. We are using a set of sensors to detect the affected human being like heart rate sensor temperature sensor, PIR sensor, and along with these, we are making use of the Infrared sensor to avoid any obstacles in the path. The camera is used sending live video and images continuously and they are making use of GPS in our proposed system to send the current location of the disaster affected area. By using this proposed model,

they can detect alive human beings as early as possible and sending this information to the rescue operator. save the affected human being's life. The proposed module is of low cost, and the hardware components are easily available.

III. OBJECTIVE OF THE MODEL

The main objective of the project is to detect human and send the message whether the person is authorized or unauthorized. And also used as surveillance robot in disaster areas

1.This project aims to give a practical design to build the Simplified version of a human detection robot which has to be active within disaster areas Like where rescue teams cannot detect the humans due to a lot of technical Difficulties.

2.In such conditions, when there is a risk of hazardous environment it Will better to uses some high technology equipment's to reach that mission fastly and effectively by finding, searching and giving information about unauthorized HUMAN movement in given boundaries. And also, by detecting the human.

IV. BLOCK DIGRAM
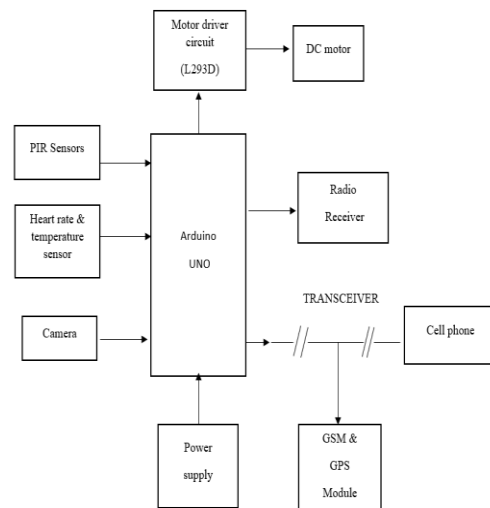
Here above represents the block diagram of live human detection robot

- The live human detection Robot has two parts, first one is transmitter part and next one is receiver part. The transmitter side consists of Arduino Uno microcontroller the inputs to the

microcontroller are PIR sensor, Temperature and Heart rate sensor. The outputs are L293D motor drive module, to which a DC motor is connected for the wheels of the vehicle for the robot.

• A DC motor is used to move the robot in left, right and forward and backward directions. L293D motor drive circuit controls the DC motor to move in the direction according to the control by the user. The direction of the robot movement is decided from the signals given by the remote control. Human can be detected using a Passive infrared sensor. A PIR sensor is a sensing device that produces PIR signals, these signals able to detect temperature. Normally Human being produces a heat which is detected using this PIR sensor. Human being produces an 9 to 10 microns of temperature or heat. A PIR sensor's angle of detection is restricted to 1800

V. HARDWARE AND SOFTWARE REQUIREMENT

The hardware components required for this robot:
• Arduino uno micro controller
• motor driver
• GSM & GPS module
• PIR Sensors
• Heart rate sensor
• Temperature sensor
• Camera
• Dc motors
• Radio receiver
• Cell phone
• Battery

SOFTWARE REQUIREMENT
The software components required for this robot:
• ARDUINO IDE

VI. APPLICATIONS

This robot can be used in disaster effected area, war fields, floods areas etc.
• Medical Field
• Industrial Field
• Smart city

VII. CONCLUSION

The development of live human detection robot for the environment is a great challenging task. Alive human detection robot is to detect alive human beings. It is user friendly robot for detection. this proposed model is very much useful for rescue team, at military base and disaster affected areas in the disaster environment

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