

MULTI APPLICATION SURVEILLANCE ROBOT USING IOT

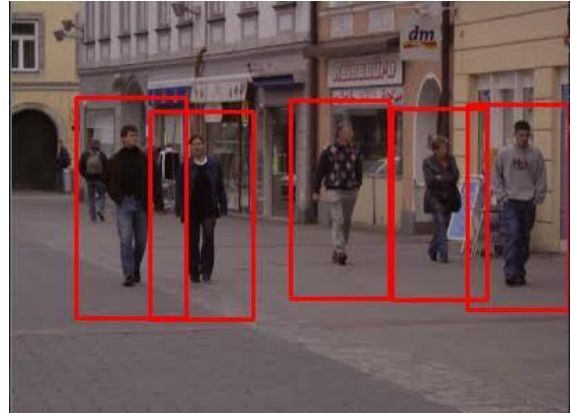
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ABSTRACT: The primary objective of this paper is to plan and build up a reconnaissance robot that can diminish the losses of valuable items from houses, malls, banks this surveillance robot not only recording the video and audio of the people within its range, but also captures when it detects a person. We performing this project using Machine learning and python code running in raspberry pie. This project is complete online basis. In today's era the monitoring of military areas is The need of the hour due to increased attacks of the enemies And emissaries hence surveillance in tightly constrained Spaces is demanded in many military covert operations. IoT Based cognitive robot is an upgraded adaptation of many Unmanned ground vehicle and unmanned aerial vehicle Which has been already proposed. In this proposed project, Design and development of the cognitive robot will be done, it is easy to catch any person which saves time.

INTRODUCTION:

The review study shows that to plan and build up a surveillance camera that can reduce our work and time. This will detect a person and captures 3 images. It will detect a human body either the face is visible or not. It will also detect a person at once. If the same person stays in front of camera for a long time it will capture only once. If there are multiple persons in its range. It will create ID0, ID1, ID2 etc. If only face appears then also it captures. Robot will captures 3 snapshots at of 1second.The total project is code based. We need to add code to raspberry pie so that camera could work.



Different Human Detection Algorithms implementation on edge. (a)Haar Cascaded. (b) HOG+SVM (c) SSD-Google Net. (d) L-CNN

I. WORKING

Smart video surveillance is a IOT-based application as it uses Internet for various purposes. The proposed system intimates about the presence of any person in the premises, also providing more security by recording the activity of that person. While leaving the premises, user activates the system by entering password. System working starts with detection of motion refining to human detection followed by counting human in the room and human presence also gets notified to neighbor by turning on alarm. In addition, notification about the same is send to user through SMS and e-mail. software is given by tindercad (for video surveillance) and GSM module (for SMS alert and e-mail notification).

The robot consists of Arduino Uno microcontroller which acts as the heart piece of the robot. This robot also consists of DC motors, wheel chassis, battery, Wi-Fi module (ESP8266 12e) and various types of sensors such as ultrasonic sensor for obstacle detection, IR sensor for detecting pits. The robot can be either operated automatically or manually. User end communicates with the robot

by implementing the concept of Internet Of Things. In this project, we use wireless transmitting camera that provides audio and video information that can be received at the user end.

A. Existing System

- Already existing systems use robots that have limited range of communication as they are based on RF Technology, Zigbee and Bluetooth.
- Some existing projects use short range wireless camera.
- Some existing robots can only be controlled with a manual mode which needs human supervision throughout the whole surveillance process.

B. Proposed System

- By interfacing Wi-Fi module with Arduino, we can get unlimited range of operation.
- Robots can be operated in both manual and automatic modes.
- By using Arduino microcontroller, the cost and complexity can be reduced.
- The communication with the robot occurs in a more secured manner

APPLICATIONS

By combining camera features with the robot we can easily monitor indoor as well as outdoor locations during daytime and at night.

- Remote areas can also be explored.
- Used to record and send video output of the required environment.
- It also captures pic by every moment that detects.

ADVANTAGES OVER CURRENT SYSTEM:

In various areas there is a need of constant surveillance. The current surveillance system includes monitoring by using CCTV cameras and other monitoring system. Mostly these systems are stationary and they can cover a limited area. These systems are mostly control manually or through a computer. They cannot be used to cover a larger area as well as they cannot be controlled using any mobile device. In short we can say that these systems are

dynamic enough much which gives the need for the development of a surveillance system which is more dynamic and can be controlled remotely. This project is aimed at developing a surveillance system which can be controlled remotely

by using an iot. It includes a robot with a Wireless Camera attach to it. This robot captures the high resolution video feed and transmits it to the connected Android device which is used to control the robot.

PROS:

- Increase Public Safety
- Reduce Crime Rate
- Helps Catch Criminals
- Provide Evidence & Gather Clues

CONS:

- Easily Abused
- Expensive
- Doubts About Effectiveness

LITERATURE REVIEW

P.Raja, Swapnil Bagwari et al (2018) presented a MASS(military assistance and surveillance system) that Uses different type of sensor to monitor the soldier such as Their location, health conditions, surroundings, sending Data to base station, etc. being a wearable device it Monitors the pulse rate as well as send the respective data To the base station and by using GPS module the location Can also be monitored by military base station. Since it is Wearable installation will be cost effective and will add a Heavy pack load for soldier

Minal S.Ghute, Kanchan P.Kamble, Mridul Korde et al (2018) Described a military surveillance robot system consists of a Single unit, which will monitor the environment in various Hazardous conditions and provide live video feedback. Gyro sensor has been used to move robot in hilly areas, Metal detection for landmines. It uses Bluetooth Connectivity for wireless communication through mobile Application which make it range limited.

RELATED WORK

Mechanical technology in the field of observation and salvage is well known. A ton of exploration has been accomplished for sending live video, remote control arrangement of robots to build up long reach and solid correspondence. The most well-known strategy is to utilize a remote camera alongside expensive sensors and mount them on the robot to get the live video and other climate boundary subtleties. The robot is controlled either with Bluetooth or Zig-Be.

A multipurpose strategic robot has likewise been made stacked with different sensors and equipment configuration to run altogether kinds of territory yet again has a restricted reach for criticism video and control of robot. Robot for indoor observation that needs an extraordinary CMOS (Complementary Metal Oxide Semiconductor) Camera, different sensors and Zig-Bee for correspondence has been made, the robot consequently charges itself when charge is diminished.

An automated ground vehicle utilizing GSM innovation for the observation and salvage activity has been made. A covert agent robot utilizing GSM innovation has been executed with extra component of remote charging.

Radio Frequency innovation has additionally been investigated for remote correspondence. To give long reach to correspondence a robot that uses the DTMF (Dual Tone Multi Frequency) innovation has additionally been fabricated.

A self-ruling robot for indoor reconnaissance has been presented which constructs the guide of climate, self limits and works self-governingly yet requires Laser Range Finder, RFID (Radio Frequency Identification) and Vision Data to achieve the work.

All the past work includes utilization of costly parts like remote camera, chip and microcontrollers, and so forth and experiences restricted availability range. A few arrangements have been proposed like the utilization of DTMF and Radio recurrence yet with utilization of DTMF innovation it is hard to control the robot particularly in an intricate climate in light of the fact that once the order is send with DTMF

tone the individual order is proceeded till next order is sent. For instance in the event that forward order is sent, robot will keep on pushing ahead till stop order is sent. Additionally dependability in correspondence isn't ensured because of climate clamor in Radio Frequency correspondence. Innovations, for example, Bluetooth, Zig-Bee and Wi-Fi gives high information rates and dependability however doesn't give a long reach. Our idea is somewhat remarkable as in it gives a minimal effort arrangement that offers limitless reach, video criticism. The robot can stay away from snags. It is given temperature, stickiness, smoke and gas sensors to gauge different climate boundaries. The robot has self-governing route office. The utilization of Smartphone permits the client to get live sound information from the climate. The utilization of Android permits the utilization of numerous applications that can be useful in reconnaissance and salvage activities. The automated arm encourages getting of articles like radioactive and other unsafe items. Speed increase and GPS information are gotten from inbuilt sensors in Smartphone. It can likewise recognize people if present nearby. The robot can be controlled from a Laptop, a Tablet tackling the issue of versatility of controlling framework. Segment II depicts the connected work Section III portrays the proposed framework. Area IV depicts the framework portrayal Section V arrangements the sensors utilized in robot. At long last close this paper in segment VI.

CONCLUSION

The robot model can be accounted for to construct a robot whose engine development and method of activity for example manual or robotized are constrained by utilizing a cayenne programming that is utilized to assemble IoT based application. The remote night vision camera is utilized for video recording and the live transfer of the video can be seen through an android application known as V380. The PIR sensor utilized on the robot sense the movement in its area and tells something similar to the administrator on the android telephone or PC by short message administration (SMS) through GSM administration module prepared on the robot.

The robot proposed can diminish the death toll of on line regions, and different areas where military reconnaissance is required. With the assistance of live video real time the administrator can play out the watching obligation and recce any neglected territory.

The laser weapon prepared on the robot can be utilized to shoot the intruder if fundamental and the metal locator can recognize the landmines covered in the ground, the GPS tracker prepared on the robot can give the directions of the landmines.

The further exploration can be completed to conquer the impediments of the proposed robot like the powerlessness of the robot to meander in the downpour. The size and weight of the robot can be additionally limited by utilizing inventive plan and progressed material to assemble a robot.

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