

Surveillance Robot for Deep Forest Areas

V. Parthipan¹, V. Mahendra Prasaath², R. Kiran Kumar³, K. Manoj Prabhu⁴, B. Manishwara Prabhu⁵

¹Assistant Professor, Department of Electronics and Communication Engineering, Sri Eshwar College of Engineering, Coimbatore, India

^{2,3,4,5}Student, Department of Electronics and Communication Engineering, Sri Eshwar College of Engineering, Coimbatore, India

Abstract: Developing surveillance and monitoring systems can be pretty challenging at times, due to the fact the structures have to be designed with consideration of the surroundings to be monitored. Good surveillance structures favor to have dynamic features, e.g. monitoring cameras. Monitoring such a large place would additionally be a challenge for the protection officers, as they will want to spend too a desirable deal time to patrol covering all places. To tackle the challenges like surveillance of a massive constructing with many levels, which would insure a excessive cost to set up many cameras at many locations dynamic surveillance systems encompass hazardous areas. Surveillance of far off area as well as remotely control of the unit the use of Wi-Fi as medium. Raspberry pi serves the cause of server as excellent as the microprocessor for the system. An embedded web server creates an available way for monitoring & controlling any machine which is at a long way flung place. Image is captured via the webcam positioned on the robotic unit and energetic transmitted to a ways flung end. Controls are furnished on the email where one can see the image. And can manipulate the movement of robotic unit. This paper affords a technique in the direction of surveillance and manipulate the use of superior processor like raspberry pi.

Keywords: Raspberry pi, robot, Wi-Fi, remote

1. Introduction

Effective watching is quintessential for property wooded area management(SFM) a very important difference exists between observing and auditing, that are complementary factors of a watching system. staring at may additionally be outlined due to the fact the in growth evaluation of the technical, environmental and social performance and impacts of management. A gazing machine might also be a method of guidance and organizing monitoring so it is inexpensive and easy to implement. watching structures range in sophistication they will use straightforward measure tools and paper-based recording, or they will involve advanced equipment. the important fundamental issue is not on the other hand subtle a system is, on the other hand whether or now not or now now not info is collected, reviewed and used with effectively to make sure fine management. This module troubles things to do in forest management devices (FMUs), outlined as absolutely demarcated areas of land coated preponderantly via forests, managed to a crew of specific dreams and steady with a semi-permanent wooded location management arrange. The administration two of partner FMU ought to have many

objectives, though subunits at intervals them is additionally managed for specific goals and below precise management regimes. observance ensures that the activities embarked on in an extraordinarily management organize are enforced as planned and lets in the evaluation of the performance of an FMU and its management approach. So via exploitation golem we tend to are observance the forest humidness and temperature which is in a position to facilitate us to avoid a number of furnace accidents due to temperature changes.

2. Literature survey

In this there are a quantity of the tactics through quite a few in the course of this we have a tendency to include our some of the principles which might facilitate United States of America to create this that are "A police work mechanism for actual time commentary and capturing". A mechanism is typically an electro-mechanical machine which will operate duties mechanically. The closed-circuit television is one that is employed for the purpose of protection machine in interfere areas. this approach is meant to advance a video observation, shooting the image and to keep video frames in Coyote State (Secure Digital) reminiscence mounted on the mechanism for more verification. precise mobile phones are critical Electronic devices in our life. Consequently, House automation and safety system turns into one amongst the sticking futures on mobile devices. A cellular software has been developed that interfaces correct phone with the safety device over Wi-Fi (Wireless Fidelity) network.

Another one paper that is facilitate North American state "Wireless police work ". We suggest a low priced easy machine police work golem victimization raspberry pi, micro-controller that use servomotor, DC motor dominant. police work golem every now and then consists of a video camera, servomotor, DC motor, raspberry pi, blue tooth module, supersonic distance detector & optical maser gun. planning of the golem in such the simplest way which may also be managed victimization blue teeth app from the mechanical man mobile. we have a tendency to had developed the fabulous switches on the app through that we are in a position to administration the motion of it. Here, Bluetooth act as an interface between the controller and mechanical man app. in preserving with the command obtained from the user, the golem movement may also be controlled.

Another one reference that we have a tendency to embody are, “Surveillance golem victimization Raspberry pi”. the most goal of this paper is to improve a digital surroundings for police work suspicious and focused locations for user with none loss of human life. it is supported development of a golem automobile for observing/spying the suspicious objects. It will unendingly monitor the objects. golem will pass in each path (left, right, forward and backward). It is used for video police work and remotely manage the precise region victimization Wi-Fi as medium. The digital camera that is placed on the robotic unit can seize the video and it transmits spirited to the remote finish. the most important utility of this paper might also be analyzed victimization hypertext mark-up language net content which may also be accustomed administration the motion of the golem. L293D is quadruple twin H-Bridge motor driven IC.

3. Proposed system

This framework absolutely compress of these components are of Microcontroller, Motor Driver, Motor, DH22, Power Supply, Wi-Fi, Camera. Which is help us to make. This introduce a ton of plans comprehensive nature, programming innovation, size, weight. This configuration makes use of scaled down sensors which have been superior for extremely specific detecting of changes in the gadget with the help of the microcontroller.



Fig. 1. Raspberry pi

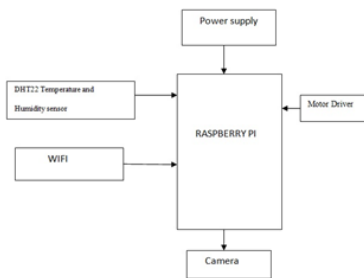


Fig. 2. Block diagram

Fig. 1, manifests the diagrammatic hardware setup. The factors from above are used to make the smart board machine to which deep forestation parameters are monitored. By utilizing these sensors, uncooked data of forest temperature and humidity parameters are measured and transferred to Back-end server the use of Wi-Fi module.

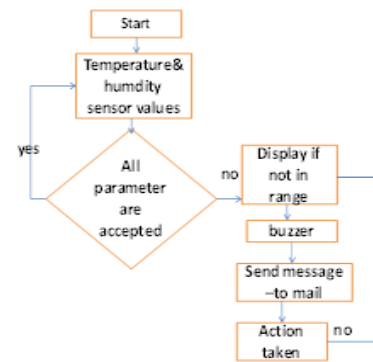


Fig. 3. Flow chart

4. System implementation

A. Raspberry PI



Fig. 4. Raspberry pi

Raspberry pi platform is most used when Arduino though general applications of PI are less it is most renowned when creating superior applications. Additionally, the raspberry pi is an open furnish platform at any place one can get lots of linked data so you will be capable to customize the device reckoning on the necessity.

B. Sensors

1) Temperature and humidity sensor



Fig. 5. Temperature and Humidity sensor

The DHT22 ought to be a basic, low priced digital temperature and humidness sensing element. It uses a electrical phenomenon humidness sensing element and a semiconductor machine to stay the encircling air, and spits out a digital signal on the statistics pin (no analog enter pins needed). It’s fairly convenient to use, then again wants careful temporal association to take hold of knowledge. The sole actual draw lower back of this sensing component is you’ll be able to only get new information from it once each a pair of seconds, for this reason once victimization our library, sensing component

readings will be up to a pair of seconds recent. Merely join the main pin on the left to 3-5V power, the second pin to your information input pin and also the right pin to ground. Though it makes use of a single-wire to ship understanding it's now not urban core One Wire compatible! If you want a couple of sensors, every must have its personal knowledge pin.

C. Motor driver



Fig. 6. Motor driver

The enter to the motor driver IC or motor driver circuit can also be a low modern-day signal. The operate of the circuit is to convert the low current sign to an excessive modern signal. This excessive cutting-edge signal is then given to the motor. The motor is a brushless DC motor, brushed DC motor, stepper motor, one of a kind DC motors etc.

D. DC motor



Fig. 7. DC Motor

A machine that converts DC wattage into mechanical energy is understood as an on the spot Current motor. DC motor running is predicated on the precept that as soon as a current carrying conductor is positioned in a very flux, the conductor experiences a mechanical pressure.

5. Results and discussion

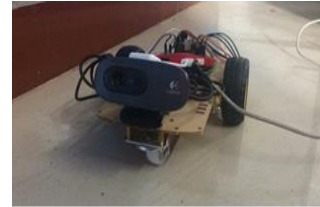


Fig. 8. Result

6. Conclusion and future scope

In India there is no proper device to display the deep forests. Where this may additionally lead fires in timber or serious effects to human being. It is due to the fact of there is no acceptable monitoring machine in the forest. During summer seasons or wet seasons wooded area officers or greater officers have to monitor the deep wooded area continuously. There is no sufficient amenities or improvement too in the deep forest. These are the issues faced by means of the forest officers or human beings two that are in this paper. Where we introduce the surveillance robot system through overcoming the problem. On extra this give belief to being woodland officer or human being to monitor the wooded area continuously. Even after these offerings to officers or human being there is much extra enhancement to officers and forests is developed in future.

References

- [1] Vineela Kadium, G. Pavani, 2014. Smart Phone Controlled Two Axes Robot for Video Surveillance Using Wireless Internet and Raspberry Pi Processor, International Journal of Research in Advent Technology, 2(10).
- [2] Shantanu K. Dixit and S. B. Dhayagonde, "Design and Implementation of e-Surveillance," Advanced Research in Computer Science and Robot for Video Monitoring and Living Body Software Engineering, Mobile Remote Control, 2014.
- [3] Ramya, V. and B. Palaniappan, 2012. Web Based Pande, "Video Surveillance System Using Embedded Robot for Safety and Security Motion Detection. A Survey, NCETCSIT. Applications Using Zigbee, IJWMN, 2011.
- [4] Kunal Broker, Rohan Gaikwad and Ajay Singh Rajput, "Wireless Controlled Surveillance Robot," IJFRSE, 2015.
- [5] Vineela Kadium, G. Pavani, "Smart Phone Controlled Two Axes Robot for Video Surveillance Using Wireless Internet and Raspberry Pi Processor, International Journal of Research in Advent, 2014.