



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 8, Issue 3, March 2020

Protection System for Humans and Animals from Electric Fence Using IOT and Cloud

Sasi Kumar D¹, Dr B G Geetha²

B.E Student, Department of Computer Science and Engineering, K.S. Rangasamy College of Technology,
Tiruchengode, Tamilnadu, India¹

Head of the Department, Department of Computer Science and Engineering, K.S. Rangasamy College of Technology,
Tiruchengode, Tamilnadu, India²

ABSTRACT: Electric fence could also be a barrier that uses electric shocks to discourage animals or people from crossing a boundary. The voltage of the shock may have effects ranging from uncomfortable, to painful or perhaps lethal. thanks to this sort of electrical fences people were died lots when put next with the animals. Here to forestall this sort of electrical accidents we are implementing this project “PROTECTION SYSTEM FOR HUMAN AND ANIMALS FROM ELECTRIC FENCE USING IOT AND CLOUD”. this method preventing the people from such electrical accidents and also prevent the animals from hunting in forest using PIR sensor. PIR stands for Passive Infrared sensor; PIRs are able to distinguish if an infrared emitting object is present by first learning the ambient temperature of the monitored space so detecting a change within the temperature caused by the presence of an object. Using the principle of differentiation, this is often often a check of presence or non- presence. The PIR sensor detects the chassis temperature and it cuts off the supply passes through the fence and produces a sound signal by the employment of a hooter. If the human moves from the range of the sensor the supply again passes through the fence and so the hooter gets turned off. On another side is sometimes with current supply for prevent the people like hunters to entering into the reserved forest area. This fence also produces some frequency which can irritate the animals so help to not entering into the village. the foremost theme of this project is where preventing not only the human but also the animals from hunting. it's totally useful in forest fence furthermore as in agriculture_fence.

I. INTRODUCTION

IoT could also be a network within which all physical objects are connected to the online through network devices or routers and exchange data. IoT allows objects to be controlled remotely across existing network infrastructure. IoT could also be an excellent and intelligent technique which reduces human effort furthermore as quick access to physical devices. This method also has autonomous control feature by which any device can control with none human interaction.

AWS CLOUD SERVICES

Amazon Web Services (AWS) is that the world's most comprehensive and broadly adopted cloud platform, offering over 165 fully featured services from data centres globally. numerous customers — including the fastest-growing start-ups,



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 8, Issue 3, March 2020

largest enterprises, and leading government agencies—trust AWS to power their infrastructure, become more agile, and lower costs. AWS offers the most important global footprint within the market. No other cloud provider offers as many regions with multiple Availability Zones, with 69 Availability Zones (AZs) within 22 geographic regions around the world, and announced plans for 9 more AZs and three more Regions in metropolis, Jakarta, and Milan. AWS has been architected to be the foremost flexible and secure cloud computing environment available today. Our core infrastructure is created to satisfy the protection requirements for military, global banks, and other high-sensitivity organizations.

NODE MCU (ESP 8266)

Node-MCU is an open source IoT platform. It includes firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. The term "Node-MCU" by default refers to the firmware rather than the event kits. The firmware uses the Lua scripting language.

PASSIVE INFRARED SENSOR

A passive infrared sensor (PIR sensor) is an electronic sensor that measures infrared (IR) light radiating from objects in its field of view. they're most often employed in PIR- based motion detectors. PIR sensors are commonly employed in security alarms and automatic lighting applications. PIR sensors detect general movement, but don't give information on who or what moved. For that purpose, a brisk IR sensor is required. PIR sensors are commonly called simply "PIR", or sometimes "PID", for "passive infrared detector". The term passive refers to the particular undeniable fact that PIR devices don't radiate energy for detection purposes. They work entirely by detecting actinic radiation (radiant heat) emitted by or reflected from objects.

II. EXISTING SYSTEM

In India where 70% of the lands is being occupied for agriculture purposes with lots number of farmers working in each field. In these agricultural areas, electric fences are installed so on forestall the crops from external sources. However, this purpose plenty of{to avoid wasting} lots of the crops and so the sphere can find yourself dangerous for those people trying to enter the sphere or perhaps the farmers working there. the electrical fences that receive a very high-power supply are installed in not only agricultural areas, but also in forest and military areas. In forest areas, these electric fences are installed to ban the human animal intervention. However, this seems to be dangerous for the citizenry those trying to enter the fence from the other side of the forest. When a personal nearing the fence tries to the touch it gets electrocuted. yet another major application of these electric fences is for military purposes. In military areas, there are chances of starting off the power supply to the fence by humans purposely to enter the other side of the border. Therefore, I hereby propose this project "PROTECTION SYSTEM FOR HUMAN AND ANIMALS FROM ELECTRIC FENCE USING AN IOT AND CLOUD" to serve various purposes is explained further.

III. PROPOSED SYSTEM

This technique proposed to shield human and animals from the electrical fence. therein the fence has two sides, on front side only those that lives nearby villages are detected and on other side only animals are to be detected. So, on outer side of fence supplied with PIR Sensor, when the human radiation comes under detection range of PIR Sensor the ability supply of the fence to be shutting downed and alarm should be turned on. So, those that near by the fence got afraid and move faraway from the range. Then on inner side of the fence has supplied with PIR Sensor with high range of detection and ultrasonic sound producing module. When the time of animals comes under the detection range the ultrasonic sound is produced by the module to irritate the animals to ran faraway from the detection range. When the time of detection the information are send to the cloud Data Base (AWS) which is monitored by the by forest rangers to create a visit on detection range. So, the people of the villages and animals are shielded from the electrical fence, this can be the most motive of this proposed system.

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 8, Issue 3, March 2020

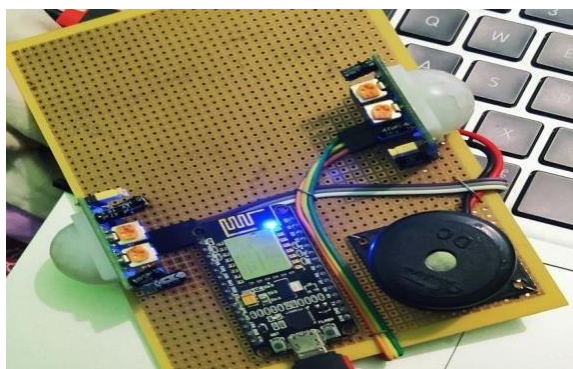


Fig 1.1 Prototype model

ADVANTAGES

Create awareness to the tribal people. Prevent animals to enter to the villages. Surveillance without manpower. Reduce hunting. Protection will be increased by analysis of knowledge within the cloud for consequence area.

IV. MODULES

Embedding Components

Every embedded device need software to work. Whether we call it firmware or embedded software, it's to regulate the device and supply the programme and decision-making for the merchandise to try to to its job. Designing embedded software is different from traditional software development, because engineers need to pander to custom hardware and extremely tight constraints in power, memory, storage, and time. ESP8266 Arduino Core As Arduino.cc began developing new MCU boards supported non- AVR processors just like the ARM/SAM MCU and utilized in the Arduino Due, they needed to switch the Arduino IDE in order that it'd be relatively easy to alter the IDE to support alternate toolchains to permit Arduino C/C++ to be compiled for these new processors. They did this with the introduction of the Board Manager and also the SAM Core. A "core" is that the collection of software components required by the Board Manager and also the Arduino IDE to compile an Arduino C/C++ source file for the target MCU's machine language. Some ESP8266 enthusiasts developed an Arduino core for the ESP8266 Wi-Fi SoC, popularly called the "ESP8266 Core for the Arduino IDE". This has become a number one software development platform for the assorted ESP8266-based modules and development boards, including Node- MCUs.

ULTRASONIC SOUND MODULE

The term "ultrasonic" applied to sound refers to anything above the frequencies of audible sound, and nominally includes anything over 20,000 Hz. Frequencies used for medical diagnostic ultrasound scans be 10 MHz and beyond. Sounds within the range 20-100kHz are commonly used for communication and navigation by bats, dolphins, and a few other species. Much higher frequencies, within the range 1-20 MHz, are used for medical ultrasound. Such sounds are produced by ultrasonic transducers. a good type of medical diagnostic applications use both the echo time and also the Doppler shift of the reflected sounds to live the space to internal organs and structures and also the speed of movement of these structures. Typical is that the echocardiogram, within which a moving image of the heart's action is produced in video form with false colours to point the speed and direction of blood flow and heart valve movements. Ultrasound imaging near the surface of the body is capable of resolutions but a millimetre. The resolution decreases with the depth of penetration since lower frequencies must be used (the attenuation of the waves in tissue goes up with increasing frequency.) the employment of longer wavelengths implies lower resolution

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 8, Issue 3, March 2020

since the utmost resolution of any imaging process is proportional to the wavelength of the imaging wave.

V. RESULTS

This project Detect the motion value and send it to the AWS cloud Service for the feature analysis and when ever the motion is detected its sent the mail over the smtp server to the receiver end to make the action to his knowledge. This is the GUI based results for the project.



Fig 1.2. Motion Detected notification

VI. CONCLUSION

In this system work have studied and implemented an entire working model employing a Node-MCU ESP-8266. The programming and interfering of Node- MCU ESP-8266 has been mastered during the implementation. This work includes the study of electrical fencing security system in many applications. it'll provide great opportunities for researchers and developers. However, the several technical issues must be addressed when managing such systems, specifically size, cost and power consumption should be reduced and an outsized amount of knowledge must be efficiently handled. during this work proposed a completely unique approach to estimate, using PIR detector, people position within a bit of a gate. Being passive, small and low cost PIR detectors are compatible within wireless sensor networks. As an individual moves within PIR's, the sensor node locally calculate passage duration and PIR output maximum amplitude. Thus, the system protects humans and animals from electric fence with none loss of lives

REFERENCES

1. Aazam.M, Jasmin Guth, Uwe Breitenbicher (2018), A Detailed Analysis of IoT Platform Architectures: Concepts, Similarities, and Differences, , vol. 33, no. 4, pp. 1-15
2. de Lima, A.C.S., Portela, C.,(2016) 'Inclusion of frequency-dependent soil parameters in transmission-line modeling', IEEE Trans. Power Deliv., 22, pp. 492-499.
3. Liu, Wang .B,Hu. F,Sun .F, and Bak
4. C. L,(2018) "Online voltage stability assessment for load areas based on the holomorphic embedding method," IEEE Trans. Power Syst, vol. 33, no. 4, pp. 3720-3734.
5. Khanouche M.E, Amirat .Y, Chibani
6. .A, Kerkar .A,(2016) "Energy- centered and QoS- aware services selection for Internet of Things," IEEE Trans. Autom. Sci. Eng., vol. 13, no. 3, pp. 1256-1269.



ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 8, Issue 3, March 2020

7. Sellami .R and et al.,(2016) “Automating resources discovery for multiple data stores cloud applications,” in CLOSER - Proceedings of the 5th International Conference on Cloud Computing and Services Science, Lisbon, Portugal, pp. 397–405.
8. Upadrashta .R,(2015) “An animation-and-chirplet based approach to intruder classification using pir sensing,” in Proc. IEEE Int. Conf. on Intelligent Sensors, Sensor Networks and Inform. Process, pp. 1–6.