Night Patrolling Robot Using IoT & Cloud

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Abstract—***This paper we suggest a robot patrolling security that uses night vision camera to protect any premises. The robotic vehicle is traveling at different intervals and is fitted with camera and sound sensors for the night vision. It uses a predefined line to patrol along its route. It stops at different points and if sound is heard it travels to next points. To patrol the allocated field, system uses the following IR-based path system. It monitors every area using 360degree rotating HD camera to detect any intrusion. It has the capability of tracking sound at the premises. Any sound after the firm is closed and on its predefined course it begins moving towards the sound. It then scans the area using its camera to recognize human face found. It records and begins to relay photographs of the situation immediately after identification of the sound or human face. This is where we use IOT Local Area Network (LAN) to receive transmitted images and display them with warning sounds to the user. We are therefore proposing a fully autonomous security robot that works constantly and patrols wide areas alone to protect the facility.***

Keywords— Patrolling,IoT, Night Vision, Arduino Uno, etc.

I. INTRODUCTION

The idea behind that is to protect the region as a whole. Any small sound resulting in sending the notification through the Blynk robot to the person concerned consists of the night vision camera from which we can see the live video through the smartphone send and capture the area and send it to the user.

Night vision camera plays a significant role in rendering the robotic device automatic. Robotics is a modern technology which is changing human life, as the key and emerging component of robotics is control and automation.

Robots function as a computer, and can be controlled remotely. Patrolling is nothing more than keeping track of an area where the corresponding robot patrolling area is constantly moving and traveling is continuously moving in the area allocating to the robot

The robot takes the pictures at 360 degree rotation. Then, these images are sent to the user in real time, they will be evaluated by the user and action will be taken if any problems are found.

Using camera motor we may gather knowledge from both sides of the external field. We can control the robot in two ways : one wired, and the other wireless. Wireless monitoring helps us operate robot from various locations. GSM is used within this module and MCU is used for camera support node.Any small sound resulting in the alarm and robot will automatically go to the area and capture the area's image and send it to the user. In making an automated robotic device, Raspberry Pi connected to the camera plays an important role.

The robotic vehicle travels at different intervals, and is fitted with camera and sound sensors for night vision. In patrolling it uses a predefined line to follow its direction. Once sound is rotating HD camera to detect any intrusion. It has the capability of tracking sound at the premises.

Any sound after company is closed and its predefined direction starts to travel towards the sound. It then scans the region using its camera to detect any known human faces. It captures and starts to relay photographs of the situation immediately upon identification of sound or human face.

Here we use IOT gecko to get transmitted images and view them with warning sounds to the user. So we're putting forward a fully autonomous security robot that runs relentlessly and patrols wide areas alone to protect the building. Robot patrolling is primarily used in the military zone, hospitals, shopping mall, national functions, industrial field, etc.

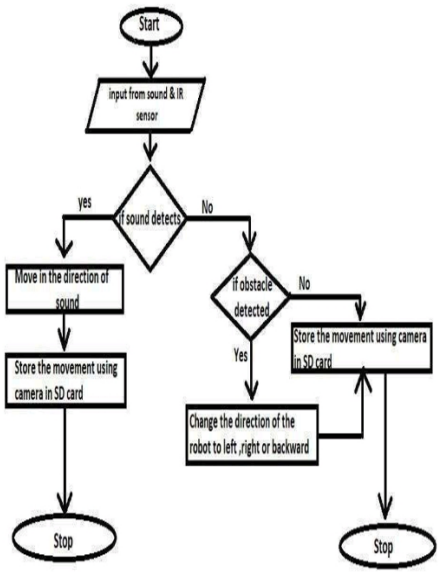
II. LITERATURE SURVEY

Therefore there is a need to develop a device that can detect the operation in this area and send the inspection device nearby a message. Within this framework, they render a spy robot using Raspbian operating system with remote monitoring and control algorithm.

The spy robot system is connected to three types of equipment including a Arduino board, a camera and a night vision sensor. The information collected about the activities that operate on the front of the camera is sent to users via the web server which can be posted simultaneously on the web page. Cheng Tang, Qunqun Xie, Guolai Jiang, Yongsheng Ou, do a night out on the road based on a planar reflection model in 2013. It has given diverse road detection ideas and different monitoring concept.

In 2017, he made night rider Kirk Mac Tavish, Timothy D. Barfoot and Michael Paton: visual odometry with headlights. This technique measures relative transfer for mobile robotic systems with a series of camera images. A camera can be used to get vast quantities of input data, which are comparatively cheap sensors, making it highly costly functional captures in mobile robots. As this is a passive part , however, it will be dependent on external strength, which can decrease its accessibility.

III. FLOW CHART



V. RESULT

This is a picture captured the road with the night vision camera

This a picture captured the streets in the night with the night vision camera

This is a picture captured in a room with the night vision camera

IV. CONCLUSIONS

The paper ends with a definition of patrolling safety robot, which uses night vision camera to secure its premises. The robot runs in the same direction, at different intervals. It also features a camera with night vision and sound sensors. It is employed by a predefined route to patrolling movement given by the controller. It collects and sends out the pictures directly to the show room for further action.

According to this device, the whole area monitoring is conducted using the night vision camera and even automated system when the sound is detected by the robot will automatically send the notification that it can capture the live video of the area where the data can be stored or the video can be live streaming, because the camera used is a night vision camera, the security system can benefit from streaming Video using IOT and sending the message is via Wi-Fi from the blynk server. This machine is an automated intelligent way to patrol night vision.

I. References

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