



Women Safety Night Patrolling Robot

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ABSTRACT:

Today in the ongoing universal synopsis the first and foremost questions in every girls mind, considering the ever build up circumstances on women moles ration in present time is mostly about their safety and security. This device is extremely portable and can be triggered by the victim being assaulted by just clicking the button to capture the assailant's image via the Raspberry pi camera. In light of the present situation of the metro cities and other big cities, women security has emerged as one of the most important requirements in our country. In this world of advanced technology and smart electronics it is required to have a simple and cost-effective safety gadget that helps the victims during unforeseen dangers. This paper covers descriptive details about the design and implementation of prototype for an electronic gadget which has the potential to serve as a safety wear in the coming years.

Keywords: Night vision, patrol robot, sound sensor, IOT, security, machine learning, line follower, image processing.

1. INTRODUCTION:

In the existing situation, women keep up with men throughout all walk of life, but at the detriment of being victimized, Harassment, public abusive behavior or even at their own becomes. They cannot return to their homes at any time could not even go to work in peace. There is some kind of the restriction that women are subjected to which not only their sense of freedom but also their belief and expectation are destroyed. This project focuses on women safety in a network that is explicitly built to provide women safety and security. It's quite very clear from the reason mentioned that there is a growing need for women's defense in the country. In today's world, women safety has become a major issue in our country as women can't step out of their house at any time, especially during night. It is primarily due to fear of violence against them or being physically or sexually abused. The fear of harassment against women is not only the condition at outside but it may also happen at homes. The best way to reduce probability of becoming a victim of violent crime (robbery, sexual assault, rape, domestic violence) is to recognize, defense and look up resources to help you out of hazardous situations. If a women is in dilemma or get split from friends during a night out or someone is following with bad intention (sexual assault) or don't know how to find back residence then this device with her will guard her and bring assistance when she needs it by giving her current location and health conditions to her associates and control center through SMS and call. This device not only provides family and police support but also helps in getting medical support as fast as possible.

2. PROPOSED METHODOLOGY:

In this proposed device, Node MCU is equipped with the night vision camera That helps the user to go for automation and helps to find the person or any problem Detected using the sound sensor and automatically goes to that area and captures the Image and sends it to the user using IOT technology according to the sound Generated. The robot has a range of knowledge to protect the greater region. When the barrier does is at the front of the robot it changes its direction to The opposite side of it. The live photos and videos are recorded by the Vision system. Two generator's are enough to power the module for robot Movement. Because the number of gears in the motor is small, less power Consumption will be received. This robot will be moving front and backwards with the help of wheels with the use of Dc engine. Dc engine Transforms electrical power into mechanical power. This motor

consists of 60 Torque, this torque helps to move the wheels. Here a 12volt battery is used to supply the power to the MCU-node. Where the MCU node is used to connect to the Wi-Fi. After connecting to the Wi-Fi the captured picture and will be visible in the Operator's mobile. Where the operator can turn the camera 360 degrees to check out The whole street. There is a sound sensor using in the robot. This video and the audio file will Be monitored by the operator who is having with robot.

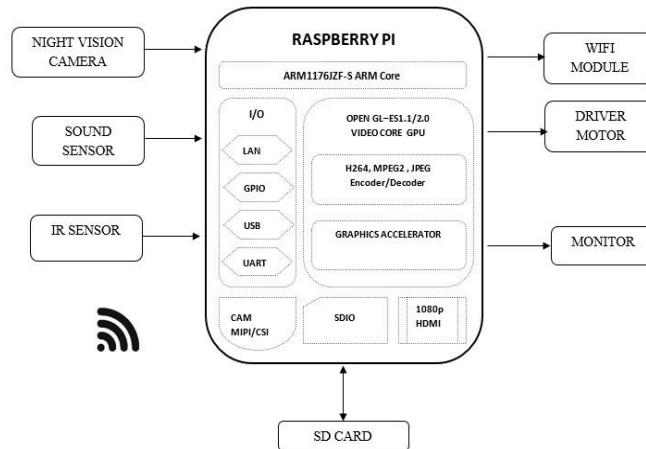


Figure :1 Block Diagram Of Night Vision Patrol Robot

2.1 BLOCK DIAGRAM DESCRIPTION:

In this project IR sensor is used to make the robot move automatically following a specific path. Sound sensor is used to know the sound in the particular area.

IOT is used to send the capture image to the person.

Raspberry Pi - Low-cost credit-card-sized machine that connects into a computer display or television, and uses a keyboard and mouse. It is an accomplished little device that enables populace of all ages to walk around computing and to study how to program in Scratch and Python languages

Night Vision HD Camera - Infrared night vision combines infrared enlightenment of spectral range between 700 to 1,000 nm with HD cameras perceptible to this light. The result, which is apparently dim to a human viewer, appears as a monochrome figure on a usual display tool.

Sound Sensor - Used to notice the sound, this sensor is used to notice the intensity of sound. IR Sensor - Specific light sensor to find a light wavelength in the Infra-Red range.

DC Motor (Robot module) - Designed to change the electrical present into power that will force the workings to a robot by apply a firm degree of torque to the motor beam. Raspbian Jessie - Operating system and Raspbian is extremely optimized for the Raspberry Pi lines low recital ARM central processing unit.

3 HARDWARE REQUIREMENTS

- Raspberry Pi
- Night Vision Camera
- DC Motor (Robot module)
- Monitor
- Ultrasonic sensor

SOFTWARE REQUIREMENTS

- Python
- HTML

4 HARDWARE COMPONENTS USED:

Raspberry pi

The micro SD card us used for installing OS and the complete project will be done with python coding. Raspberry Pi is a small single-board Computer developed in UK by Raspberry Pi foundation to promote the teaching of computer science in schools and in developing countries.



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Night Vision Camera

The raspberry pi camera board contains a 5 M Pixel sensor, and connects via a ribbon cable to the CSI connector on the Raspberry pi. In raspbian can be enabled by the installing or upgrading to the latest version of the so and then Raspi-config and selecting the camera option.



Ultrasonic sensor

This sensor is a high performance ultrasonic range finder. It is compact and measures an amazingly wide range from 2cm to 4m.



5v Adapter power supply

Raspberry pi power source to turn it on. 5v adaptor power supply is enough to power up.



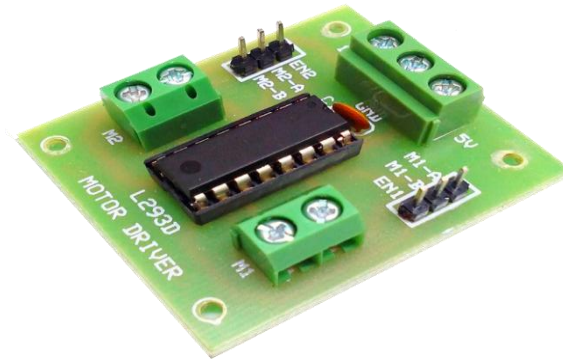
DC motor

Almost every mechanical movement that we see around us is accomplished by an electric motor. Electric machines are means of converting conventional energy. Motor take electrical energy and produce mechanical energy.



L293D Motor Driver IC

A very easy and safe is to use popular L293D chip. It is a 16-pin chip. he L293D is designed to provide bidirectional drive currents of upto600-ma at voltage from 4.5v to 36v.



5. SOFTWARE USED:

In this system python software is used to program the microcontroller. The python programming is similar to C programming.

PYTHON:

Python is a high-level, interpreted, interactive and Object-oriented scripting language. Python is designed tube highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

Python is interpreted: Python is processed at Runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.

Python is Interactive: You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.

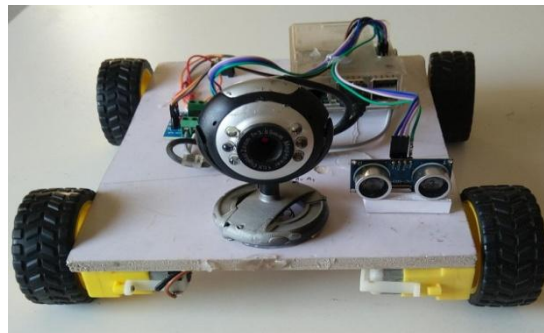
Python is Object-Oriented: Python supports Object-Oriented style or technique of programming that encapsulates code within objects.

Python is a Beginner's Language: Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW Browsers to games

6 RESULT

The proposed design will deal with critical issues faced by women during night and provide security with advanced technology. While the society may or may not change its mind set but this device will help to feel women independent.

IR Sensor reading	Accepted
Webcam Video display	Accepted
Move Forward	Accepted
Move Reverse	Accepted
Turn Left	Accepted
Turn Right	Accepted
Stop	Accepted
Ultrasonic sensor	Accepted



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