

SPY ROBOT USING LABVIEW & IOT

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Abstract : The project is intended to develop a police work robotic vehicle victimization Internet of Things (IoT) technology for remote operation connected with wireless camera for observance purpose. The most objective behind developing this Robot is for the police work of human activities within the war field or border regions so as to scale back infiltrations from the enemy facet. The Robot can functions associate in nursing applicable machine for the defense sector to scale back the loss of human life and can conjointly forestall criminal activities. During this project work, LabVIEW primarily based spy robot platform with observance and management algorithmic rule through Internet of Things (IoT) has been developed which is able to reduce man power. The spy robot contains the MyRio, camera, Wi-Fi module, Gas detector and Temperature detector. The online server and camera capture the moving object that is announce at the same time. It uploads the data that is detected by the detector. It will receive the formation in Digital and Analog forms. The user in management on top of things can speed up the mark space able to access the robot with control buttons on the mobile app. The closed-circuit television victimization spy robot is custom for varied fields like industries, banks, and searching in malls.

Index Terms - Robot, Sensor, MyRio, LabVIEW

I. INTRODUCTION

With the aim of developing a advanced technology that serves high speed technology, advanced capability to manage the robots and to device new ways of control theory. The notice on top of standards some technical improvement at the side of the necessity of high performance automaton is needed to form a quicker, reliable, accurate and additional intelligent automaton which might be devised by advanced management rule, automaton management devices and new drivers. Earlier the automatons were controlled through wired networks however currently to create robot a lot of users friendly, they're framed to create user commanded work. so to realize the necessities we will use robot as a multimedia system to regulate the user friendly automaton. Robotics is that the branch of engineering science, engineering and applied science that deals with the planning, construction, operation and application of robotics, likewise as pc systems for his or her management, sensors feedback and knowledge process.

II. EXISTING SYSTEM

Now-a-days because of advancement in technology varied freshly designed sensible homes build use of Wi-Fi enabled robot for varied applications. Principally they're used for home security purpose. Therefore one will keep an eye fixed on the folks returning within home simply by the robot automotive by introducing a camera into it. Varied alternative application also are done by this robot automotive like doing varied works on the command ex- shift on the lights when the robot is given command by the Wi-Fi enabled device.

2.1Proposed System

The rover is simply emotional from one place to a different simply by one device. Rover is used for security purpose with the installation of a camera. We are able to build the automobile do numerous tasks like moving an object from one place to a different without applying any physical force and that we may get the knowledge of temperature and gas leakages in industries by connecting the rover to temperature and gas detector and that we may connect several different sensors as per the specified application.

2.2 Block Diagram

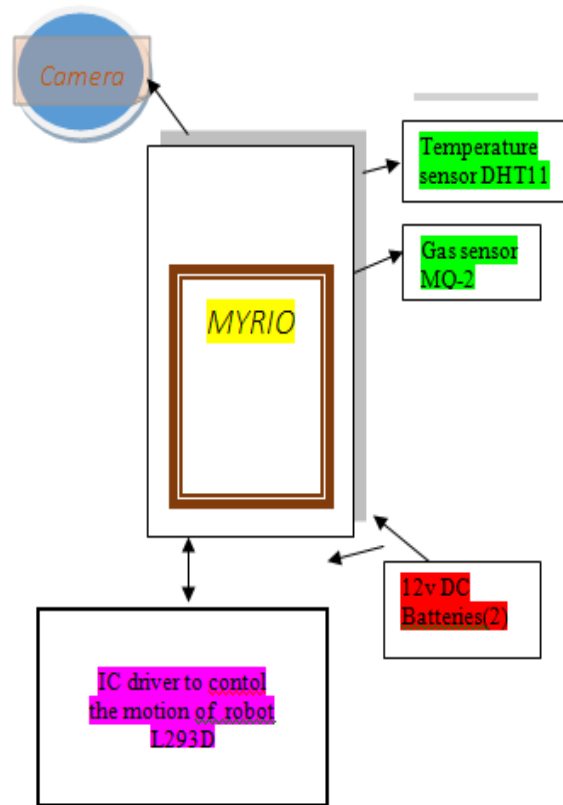


Fig. 1 Block Diagram of Spy Robot Using IoT

2.3 Components Required

1. MYRIO
2. Humidity and Temperature Sensor
3. Gas Sensor
4. IC Driver board- [1]
5. Gear motors- [2]
6. Batteries 12v- [2]
7. USB Camera
8. Connecting wires (Female to Female)-20
9. LabVIEW Software

III Components

MyRIO could be a real time embedded for analysis. it absolutely was introduced by National Instruments. We are able to use it to develop the systems that need on board FPGA and chip. LabVIEW software is needed to program it. Exploitation this device, it's quite straightforward for the scholars to style difficult systems and to resolve real world issues quite expeditiously and quickly. It process speed is nearly 10 times of the quality general micro-controllers and chip. We are able to America this device within the systems wherever there's a necessity of fast responses. E.g. CNC machines, 2 wheeled self-reconciliation robots, robots performing arts totally different human operations.

If you're exploitation MyRIO for the primary time, you must undergo the way to tack together Ni MyRIO on local area network initial so as to urge the entire plan concerning its configuration exploitation USB cable or local area network.

3.1 Pins of MyRio

- ✓ MyRIO has thirty four (34) pins in total, every having completely different practicality.
- ✓ All of those pins are listed within the table shown within the figure below.
- ✓ There are 3 completely different ports in MyRIO. They are

1. Port-A shown in Fig. 2
2. Port-B shown in Fig. 2
3. Port-C shown in Fig. 1

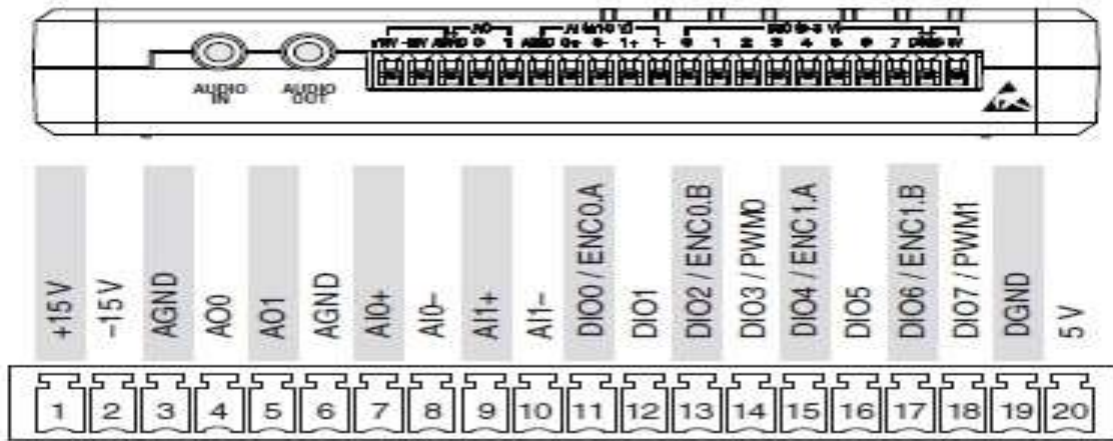


Fig. 2 Pins of port-C

3.2 Front view of MyRIO

1. MyRIO has 2 ports named as port A and port B.
2. It includes a built-in wireless fidelity defend and on board LED's.
3. The front read of the myRIO is shown within the Fig. 4 given below

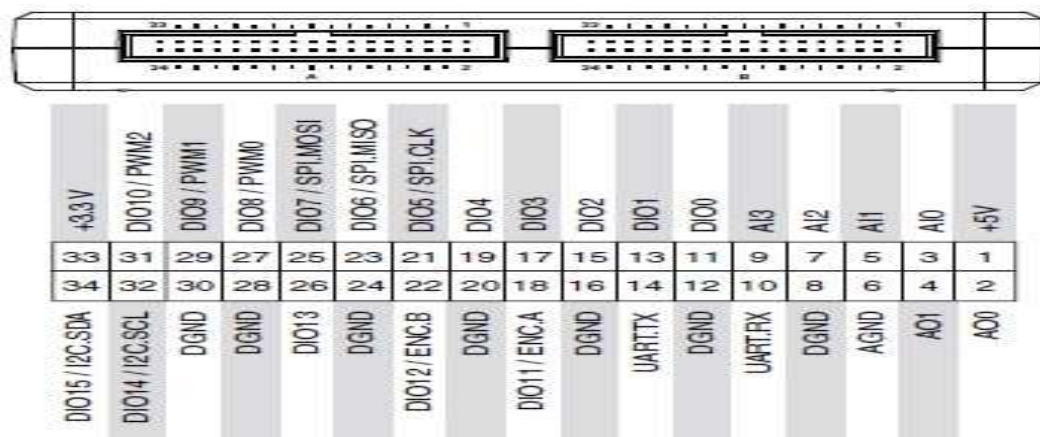


Fig. 3 Pins of port-A & B

3.3 Bottom view of MYRIO

1. At the bottom aspect of the myRIO, its power pin, laptop connection purpose, and USB port.
2. The bottom view of the myRIO is shown in the Fig. 4 given below.



Fig. 4 Front view and Bottom view of MyRIO



Fig. 4 Front view and Bottom view of MyRIO

3.4 Side view of MYRIO

1. MyRIO side view consists of 2 types of ports named as MXP-A and MXP-B.
2. The side view of Ni myRIO is shown within the Fig. 5 given below.

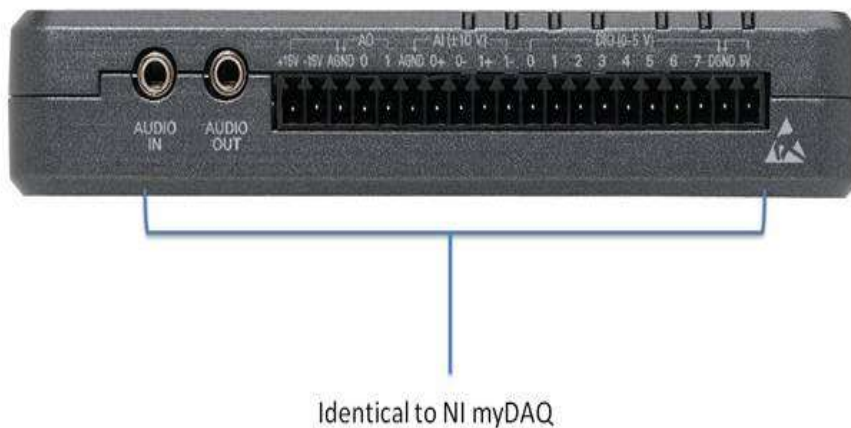


Fig. 5 Side view of MyRIO

3.5 Sensors

The following figures shows Humidity & Temperature sensor, Gas sensor, Camera and Gear Motor.

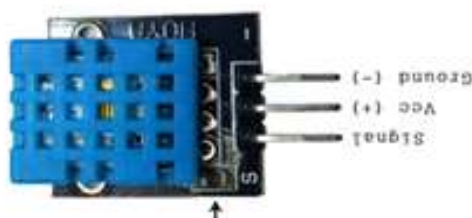


Fig. 6 Humidity & Temperature sensor



Fig. 7 Gas sensor (MQ-2)



Fig. 8 USB Camera



Fig. 9 Gear Motor



Fig. 10 12V rechargeable Lead-Acid Battery

IV. LabVIEW

LabVIEW programs are referred to as virtual instruments, or VIs, as a result of their look and operation imitates physical instruments, like oscilloscopes and multimeters. LabVIEW contains a comprehensive set of tools for effort, analyzing, displaying, and storing data, in addition as tools to assist you troubleshoot code you write.

In LabVIEW, you build a program, or front panel, with controls and indicators. Controls are knobs, push buttons, dials, and different input mechanisms. Indicators are graphs, LEDs, and different output displays. When you build the front panel, you add code victimization VIs and structures to regulate the front panel Objects.

4.1 Launching LabVIEW

The obtaining Started window seems once you launch LabVIEW. Use this window to make new projects and open existing files. You furthermore may will access resources to expand the potential of LabVIEW and data to assist you study LabVIEW.

The obtaining Started window disappears once you open Associate in nursing existing file or produce a replacement file and reappears once you shut all open front panels and block diagrams. You further more may will show the window from the front panel or diagram by choosing View "Getting Started Window".

V. RESULTS AND DISCUSSION

The robot can be capture the moving objects with camera, atmosphere conditions with temperature & Humidity sensor and harmful gas detection with gas sensor. The data captured and detected was continuously uploads to cloud, from cloud the authorization person can visualize the data. The Robot can control with mobile application and moves to the place without any difficulty. The following figures show Test bench conditions.

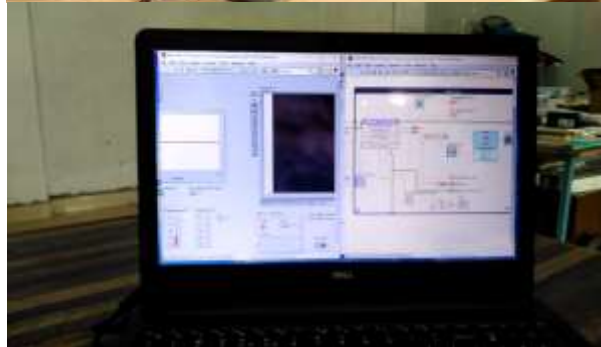
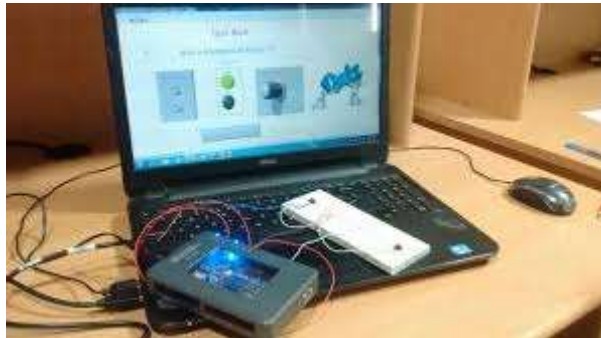


Fig. 11 Configuring MyRIO with LabVIEW

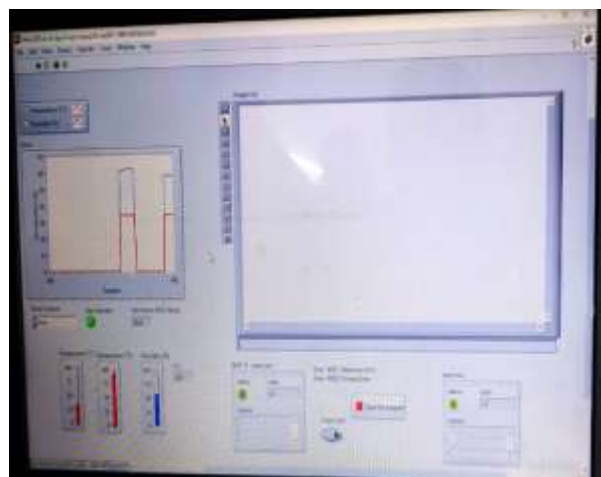


Fig. 12 Data Getting from Camera and Sensors

VI. CONCLUSION

With the assistance of this robot wheel, we've got been ready to read the items accurately that area unit happening. The police work is often has been a quite sensitive task. And it includes such a lot of risks. Thus it's better to use robot for this job rather than folks. And if you're ready to control the robots expeditiously and accuracy then you'll guarantee yourself with smart results and success. The robot can move supported the motor direction relying upon the input we tend to offer through command. With the assistance of wireless camera we tend to area unit ready to read the items that are happening within the area wherever the robot is hidden. By keeping the circuit easy, most users are ready to use it simply.

VII. FUTURE ENHANCEMENT

The robot can move looking on the motor direction primarily based upon the input. By keeping the circuit straightforward and easy, most of the users are able to use it with none issue. Our style has not caused any type of disturbances and not for long vary application it will be used as a spy robot at intervals short distances.

A wireless camera is mounted on the robot vehicle for spying and surveillance purpose even in already dark by victimization infrared lighting. Future modifications will be created to perform completely different tasks with precise management such as: A headset, with Robot Mounted with camera a mission control center a full-color show. By exploitation net we will control the system via remote location. We have a tendency to don't need any simulation tool by exploitation interface package. Halogen light will be used for the vision of the robot. We will conjointly control the device by giving it voice command thereby creating it a voice recognition system

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