**Development of Surveillance Robot to Monitor the Work Performance in Hazardous Area**

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**Publisher:**IEEE

**Abstract:**

The paper focuses on the idea of providing surveillance using a robot with the techniques of IOT. Surveillance is a major issue in public restricted areas. The robot is hired here to monitor throughout the day. This robotic vehicle has ability to substitute the human in hazardous area to provide surveillance. The robot is operated manually by connecting it to Wi-Fi and consists of sensors for identifying any obstacles and identifying humans and give live streaming to respective admin. This is operated over Wi-fi using blynk app software. Arduino IDE is used in programming the robot. ICs like L293D (motor driver) and sensors like PIR, ultrasonic helps in movement of the mechanical body and detection of obstacles respectively. A camera is equipped for capturing the image of the person identified. A face recognition algorithm can help in spotting the intruder. The gas sensor provided can sense the presence of toxic chemicals in its surroundings. Thus the robot continuously provides data in remote location in addition to the advantages of reduced human loss and detection of threats.

# Implementation of hazardous chemical gas monitoring system using unmanned aerial vehicle (UAV)

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**Publisher:**IEEE

**Abstract:**

Unmanned aerial vehicle (UAV) with hexacopter platform is an effective tool to monitor the level of hazardous chemical gas. The ability to fly at low speed autonomously allows this system to map the hazardous chemical gas level and the hazardous chemical gas distribution in each section of an area. To be able to do this task, an on-board data acquisition system is needed on the UAV to be able to measure the hazardous chemical gas level based on the GPS position of the measurement. In this paper, the data was stored on on-board memory storage and sent to Ground Control Station (GCS) through the Flight Controller (Pixhawk PX4) using MAVLink Protocol. Afterward, the data was processed and visualized on the graphical user interface on GCS. In addition, user can also interact with UAV to specify the scanning scenario. Implementation of this system was succesfully conducted to visualize measurement data of hazardous chemical gas level in both scenario based area as well as an area that has been define first by user.

# Monitoring Of Industrial Electrical Equipments

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**Publisher:**IEEE

**Abstract:**

There is a considerable chance of fire breakouts in industries such as petroleum, chemical, oils, & gas, resulting in massive devastation, destruction of livelihood, and the great majority of all, the loss of life. When an event happens, it's essential to have a mechanism in place that can alert authorized personnel and ensure that the premises are safe. In order to detect fires (via smoke as well as temperature sensors) and LPG leaks, an IOT-based industrial problem detection project was created. Data is sent to a remote location through the Internet of Things (IoT). 'Things' can communicate with sensors, circuits, programs, and accessibility through the Internet of Things (IOT). Human interaction is unnecessary for these technologies.(\p)(p)Monitoring voltage and current consumption by industry is also a feature of this system. Use this tool to locate the hottest area, which may be assessed by determining the most hazardous area for people or production. A current sensor measures the overall amount of current consumed by the industrial sector. ' If the power exceeds the threshold and the load is tripped, the IOT cloud app will notify the appropriate person.

# To design and develop LoRa-based system for remote safety monitoring

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**Publisher:**IEEE

**Abstract:**

Hazardous area, such as coal mines are below the earth surface. Below certain level there are dangerous and flammable gases. Unavailability of any mobile Network makes such area black spot for communication. In this paper, describe the using of LoRa that provide an wireless network upto certain range in this range using an another LoRa thatreceive and again retransmit the same data resulting in doubling the range of communication. Adding Lora repeaters multiply the range of communication. In such way routing sensor data till area where GPRS Packets are available and then upload the data to cloud. This can turn any black spot for communication reach to cloud storage.