Project title: Industry specific intelligent fire management system

Team ID: PNT2022TMID18163

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Paper 1:

Title: IOT BASED FIRE DETECTION AND AUTOMATIC WATER SPRINKLER SYSTEM

Author: D Teja,M.Surajkhan,k Jyothi

Year: 2022

Journal: International journal of engineering applied science and technology

Summary:

In this paper, Fire detection systems, particularly vision-based systems, identify flames before any loss or destruction occurs. In this model, a novel vision-based technology is created that uses a camera to detect flames over long distances. An immediate alert is generated on android application. The goal of the proposed system is to notify the remote user when a fire accident occurs. By using camera method, the report is automatically generated and delivered to the person immediately following the fire is detected in any part of the frame using Wi-Fi/GSM.

Methodology:

The detection of a fire, our technology will take real-time photos of the surrounding area. The flame sensor determines whether or not there is a fire or flame present.A photo transistor is used in this explicit flame detector. The infrared spectral band is used by flame detection systems. Carbon dioxide, which is produced by the combustion of organic compound materials, has a resonance frequency in this range. Put anything that can catch fire in front of the flame sensor. The flame sensor is triggered when it detects a fire or flame. As temperature increases the temperature sensor will detect and it will trigger the buzzer and buzzer will blow. The water pump is connected to a IC. If a flame is detected, IC activates the dc motor and water pump. The sprinklers connected to the pump will sprinkle the water throughout the fire affected

Paper 2:

Title: Fire Detection, Monitoring and Alerting System based on IOT

Author: Shreya Gosrani, Abhishek Jadhav, Krutika Lekhak D Chheda

Year: 2019

Journal: International Journal of Research in Engineering, Science and Management

Summary:

Internet of Things refers to connecting things and people through internet, it has imposed itself as the New business practices in different sectors. To make quick and efficient response in real time, IoT enhances the way and provides emergency managers with the necessary information and communication to make use of those assets. In this paper it is proposed that a quick response for fire hazards is evaluated and examined by using IoT based model. Fire is one of the major reasons of accidental deaths in the world. To implement this proposed system a low-cost Wi-Fi module, gas detection sensor, Flame detection sensor, buzzer to alert and temperature sensors are used. The sensors detects and alerts the local emergency with the data collected by the system, and alerts organizations like fire departments, police stations and hospitals by sending the exact location to both user and operator through module which all are well connected with.

Methodology:

IoT framework concentrates on public safety and livelihood service sector The fire detecting system with IoT standardized design methods The spark Detection sensor PT333B is used to sense the spark, the Flammable gas sensor MQ-6 is used to detect the gases like LPG/LNG and the GPS module is to obtain device location. These sensors along with Wi-Fi micro-controller are connected via Internet.

Paper 3:

Title: IOT-Based Fire Alarm System

Author: Asma Mahgoub, Abdulla Al-Ali, Nourhan Tarnad, Rana Elsherif, Loay Ismail

Year: 2019

Summary:

Fire alarm system are essential in alerting people before fire engulfs their homes. However, Fire alarm systems today require a lot of wiring and labour to be installed. This discourages users from installing them in their homes.

Methodology:

The proposed system is an ad-hoe network that consists of several nodes distributed over the house. Each of these nodes consist of a microcontroller (ESP8266 nodeMCU) connected to smoke, temperature, humidity, flame, methane and Carbon Monoxide sensors that continuously sense the surrounding environment to detect the presence of fire. The nodes communicate with a centralised node implemented with a raspberry Pi microcontroller integrated with a 4G module. Once fire is detected by the node, it sends a signal to a centralized node that is triggered to send SMS to the fire department and the user.

Paper 4:

Title: Fire detection and alarm system

Author: Trung Luong

Year: 2019

Journal: HAMK Journal of Electrical and Automation Engineering

Summary:

The central target of this project was to study,analyse and design a fire detection and alarm system.This topic was suitable because it covered a basic and important aspect in our modern life.The objectives of the project were to provide information on fire alarm system in Vietnam and Finland,to show the similarities and differences with systems in both countries.For practical part,Arduino Uno was used as the control unit with other necessary components.Upon completing this project,the author has demonstrated how a fire detection and alarm system works and analysed the system standards in the above-mentioned countries.Moreover,the fire alarm system using the Aurdino Uno was tested and found to work successfully.

Methodology:

The project consist of smoke sensor,flame sensor,LED and Buzzer,Ardunio Uno as its primary components.The fire can be detected by the flame sensor and the smoke sensor also detect fires by sensing small particals in the air.