Intelligent Fire Detector with Automatic Water Sprinkler System

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Abstract- ***Fire hazards have been a major problem for years. Thousands of people die every year due to fire hazards, not to mention the loss of property and permanent damage in health and decrement in lifestyle of the survivors. While large scale industries and buildings have taken measures such as high functioning and sophisticated alarm systems and smoke detectors to warn people of fires, small scale industries and personal homes are still majorly vulnerable to loss of life and serious damage to property due to fire. Security has become an important requisite. Everybody looks for an effective and an efficient way of protecting their possessions. The proposed method is a perfect product for small scale industries and homes. Our project describes a security system that is applicable anywhere and by anyone. It consists of a fire detector which is released using readily available components having high performance. As soon as the detector will sense fire, water sprinkler will function to put out the fire and minimize the damage***

I. INTRODUCTION

Every human has a crush on fireworks. It doesn't matter whether they are children or adults. The industry of fireworks is one among the profitable and trending business. But the protection of workers is questionable. A lot of accidents happen in the industry which cannot be avoided. Nearly 8,00,000 people are working in the industry and the death ratio is increasing year by year. The absolute data of death rate is about 200 to 300 every year. This project focuses the safety of the workers. The main motive of this project is to safeguard the workers from the fire accidents. This project will alert the industry, if it sensors the smoke and automatically pours water on the particular area which should be cleared.

II. LITERATURE SURVEY

The requirement of this proposed work is to create a robot that could fully governing itself. When the robot is kicked off by the user, the robot could maneuver itself, poke into, and quench the fire on its own without any backing. The designed robot indicates the fire through alarm. It is pre programmed with the environment. The robot can only be used in a pre trained area like home, and not for general purpose.

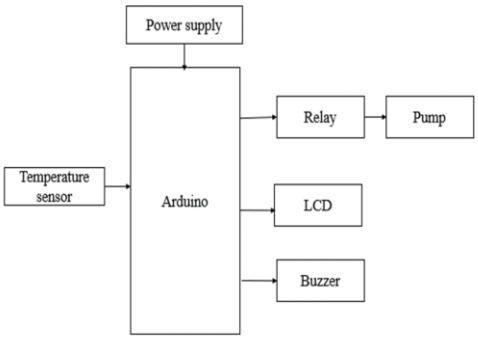
A fire extinguisher robot designed with the look and function of a robot assembled with the intention to extinguish the fire by using a water pump as actuators. The movement of the fire extinguisher robot is controlled using Android smart phones via WiFi networks utilizing WiFi module contained in the robot. User commands are sent to the microcontroller on the robot and then translated into robotic movement The robot has multiple modes of operation; the first mode of operation is to regulate the movement wirelessly using a Bluetooth module interfaced with arduino Uno, paired with a smart phone application. The second mode of operation is consummated by linking the interfacing IR sensors with arduino for obstacle detection and temperature sensing using temperature sensing LM35 IC. The quenching mechanism used in the different modes of operation is a water pump. The robot proposed is trained to do the functionality of the fire brigade. The main disadvantage is using Bluetooth for communication which is restricted to a maximum of 400 metres

III. METHODOLOGY

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 activated the dc motor and water pump. The sprinklers connected to the pump. The sprinklers connected to the pump will sprinkle the water throughout the fire affected area. In the proposed method we used IR sensor to detect the fire in homes, industries etc. if fire sensor detects the fire the dc pumping motor is ON and it pumps the water to stop the fire. Here we are using Arduino as main controller, for it we are interfacing the sensor.

IV. BLOCKDIAGRAM



V. WORKING

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In existing system we have manual fire detection and controlling of fire. In that no automatic notification of fire is not available.

VI. ADVANTAGES

1. It is User Friendly.
2. Early detection of fire
3. It is Low cost
4. To prevent major damage

VII. APPLICATIONS

1. Used in the Emergency.
2. Used in home.
3. Used in industries.

ACKNOWLEDGMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of the people who made it possible, whose constant guidance and encouragement crowned the efforts with success

We would like to express our deepest sense of gratitude to our project guide Mr. PRASHANT.G Assistant Professor, Department of Electrical and Electronics Engineering for his constant support and guidance throughout the project work.

We would also like to thank the Project Coordinator Mrs. MEGHA Assistant Professor, Department of Electrical & Electronics Engineering.

It gives us immense pleasure to thank Dr. NEEL SHETTY K, Head of Department for his constant support and encouragement.

Also, we would like to express my thanks to the Principal Dr. DHANANJAY D M for their encouragement that motivated me for the successful completion of Project work.

We would also like to profoundly thank Management of GUR UNANAKDEV ENGINEERING COLLEGE, BIDAR for providing such a healthy

environment for the successful completion of Project work.

Last but not the least, we would hereby acknowledge and thank and all other teaching and non-teaching staff of Electrical & Electronics Engineering Department, my parents and friends who have been a source of inspiration and also instrumental in the successful completion of the project work.

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