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(57) Abstract :

In the evolution of the technology, the robots are noticeable one. The robots are classified into many types like preprogrammed robots, humanoid robots etc., Among that autonomous robots are one type of a robot which is designed to perform a specific task without the help or intervention of humans. Now a days there is an increasing number of fire accidents happening daily in industries, hospitals, forests etc., In that situations the human fire fighters and the people or animals who stuck in the fire are at the stage of losing their life. During fire accidents there are some places where fire fighters cannot go and extinguish the fire and there is a possibility of injured peoples completely surrounded by the fire. Many losing their life at that critical situations. So, extinguishing the fire, monitoring the environment and rescuing the injured people is necessary and should be needed for every fire accident. The present invention Our autonomous fire extinguishing robot is aimed to design with the above three features. The industries has a high range of having fire accidents so, we develop our fire fighting robot primarily for industries. In our project we use an Arduino uno microcontroller, flame sensor, ultrasonic sensor, driver circuit, DC motor, PIR sensor, voice playback board and servo motor for operation. The basic fire fighting robot process is to detect and extinguish the fire automatically. The flame sensor sense the fire and the ultrasonic sensor is used for obstacle detection or free path navigation. Here we use a pyroelectric motion sensor and voice playback board as a human detector. Once the fire is detected, the Pyroelectric Infrared sensor and voice playback board gets activated automatically, PIR sensor used to detect the motion and the voice playback board records the sound. It happens simultaneously when the robot extinguishes the fire. The information of motion and sound with direction are being recorded by the robot during the fire accident will sent to the monitoring system of the industry. It can be done by using IOT (Internet of Things). The all components are interfaced with the Arduino UNO microcontroller. This method of handling is very useful for extinguishing the fire and for rescuing the people. This makes the robot more efficient.

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