Implementation of Wireless Controlled Robot For Fire Detection And Extinguish To Closed Areas

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Abstract- *Wireless control systems s have taken special importance over the years, when the wireless control system offers several advantages; including the disposal of used metal and the occasional maintenance of data transmission cables, in the science of wireless control unit robots are a major part of fire management and shutdown of the robotic system. The lives of firefighters exposed to the risk of death and Rim a, so the use of more secure remote control systems is required. In this case, paper is a fire extinguisher used for general fire and fire management in closed areas to protect workers in the firefighting industry from exposure, exposure or inhalation of toxic gases. The basic concept of fire detection and therapeutic robot based on fire detection during wireless cam and f lam e sensor and compress fire by sending com m and cell phone via Bluetooth connection to make the water pump turn on "ON", once the fire was extinguished.*

Keywords- Fire, firefighters, Wireless control systems.

I. INTRODUCTION

Recently, there has been a major risk for workers in the fire department. Fire-fighting robots can be used to protect firefighters from the risk of burning and inhaling toxic air and explosives, especially in confined spaces. These robots are leading the lives of workers in the fire department. A robotic system is an electronic device used in science or industry to replace a person's work or to perform tasks assigned to him. It can interact with its environment; sometimes it may resemble a physical person or perform its functions in a human manner. In general, an extremely sophisticated machine designed for individuals can be set up as a robotic device.

[1] Mobile Robots: a system that can move their bodies from one place to another. Mobile robots come in two types: integrated and independent. A robot that is composed of dumping its power and brain, perhaps relying on a desktop computer and a wall mount. The control and power signals are propelled by a series of cables (tether) to the robot, which is free to move, at least as far as the tether allows.

[2] Independent moving robots: These different types of robots are needed to bring everything together, including electrical energy and the brain. The power supply tends to be a lot of batteries, which can add a lot of weight to a robot. The brain is also bound because it has to look like a robot, and it is strong enough to absorb the energy that comes out of batteries.

[3].Today Robotics has performed very well in the industrial world production. The legs of the robot or the hands of the machine are flexible and can move in any position in the assembly line, the leg of the robot can move very quickly with precision to perform repetitive tasks such as painting and welding.

However, with all these successes, commercial robots are suffering from a basic malady: a lack of mobility. A fixed leg has a limited range of motion, depending on where you are pulling. On the other hand, a mobile robot will be able to navigate the entire production plant, easily utilizing its potential wherever it is successful [4] - [5].
A mobile robot is a system, with the following operating features:

a. Travel: perfect nature-related travel.
b. A certain level of independence: limited human communication.
c. Sight: the ability to hear and respond to nature.

All mobile robots can move from place to place, requiring the ability to move forward, backward, and turn left or right. Robots are usually operated in small areas so it helps to be able to move around in one place. Flexible speed is less important and is often unnecessary [6].

A moving robot needs an explosion (movement); is a method used for delivery which is uncontrollable in all its nature. However, there are so many ways to navigate, so the most important thing that needed to be designed for a moving robot was how to use the robot to explode.

Mobile robots can often navigate using wheelchairs, such as technology in cars, or by using the specified legs, the easiest way to deviate [7]. In general, leg cramps require degrees of freedom compared to locomotion with wheels so it

is a complex mechanical complexion.add addition to simplicity; is best suited for flat ground.

In fact, the efficiency of the locomotion with wheels depends largely on the natural characteristics,especially with the smoothness and hardness of the earth, while the efficiency of leg-locomotion depends on the size of the leg and the size of the body, both should support the robot in different places in the foot movement. Locomotion is a deceptive complement. Deceptively, the arm of the robots is suspended but moves things by transmitting energy to the environment. In an explosion, the environment is rehabilitated and the robot is moving energy through the atmosphere. In both cases, the basis for science is the study of actuators that generate interactive energy, as well as methods that use the required kinematic properties and energy. Extinction and deception are therefore shared by the same basic problems of stability, communication characteristics, and the nature of the environment.

Stability means the number and geometry of the contact points, the center of gravity,

Flexible / strong durability, and local inclination. The communication elements are; Contact Point / Route size and position, Contact Angle, Location Situation

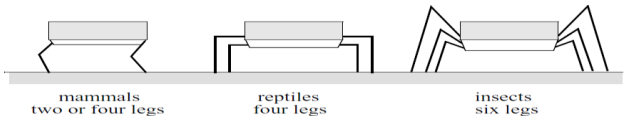


Figure 1. Arrangement of the legs of various animals

1.2. Wheel-powered robots

Wheel Mobile Robots (WMRs) have been an active source of research and development for the past three decades. This term interest has been largely provided by functional applications that can be specifically considered for mobile robots due to their ability to operate on large domains .The wheel was a popular means of transporting mobile robots and man-made vehicles.so Can it works very well, and it does that with just a simple installation of equipment. In addit ion, robotic designs with wheels. Balance is not a research problem, for robots with wheels that are designed all the time the wheels are in contact with the ground. Therefore, three wheels are sufficient to ensure a stable balance, however, robots with two wheels can be stable. When more than three wheels are used, a suspension system is required to allow all wheels to maintain ground contact when the robot meets an uneven surface. We do not have to worry about balance, the study of robot wheels often focuses on problems of grip and stability, mobility, and control: robot wheels can provide enough traction and robust robots to cover all you want, if you want to choose wheels, mobile robot models should focus on tire design or wheel geometry. The designer of mobile robots should consider these two issues simultaneously when designing the movement of a wheeled robot [10].

Mobile robots are designed for applications in a variety of contexts. Unlike cars, which are designed specifically for a high level of space (road network), all cars share the same wheel configurations because there is a single circuit in the building space that enhances dynamic performance, control, and general environmental stability. However, there is no single wheel configuration that enhances these varied properties of the various facing robots. Like a single-legged hop machine, it will never stop. However, the tea table provides an indication of the wide variety of possible tire alignment in the construction of portable robots. For example, a two-wheeled bicycle system has a moderate and unbalanced mobility. Like a one-legged jumping machine, it will never stop. However, this table provides an indication of the wide range of possible tire alignment in the construction of mobile robots [11].

1.3. Guidance

Some robots are omnidirectional, meaning that robots can travel in all directions at any time on a ground plane (x, y) regardless of the position of the robot around its vertical axis. This level of mobility requires more than one-way wheels so omnidirectional robots usually require the use of Swedish or circular-enabled wheels. A good example is Uranus, shown in Figure 2. This robot uses four Swedish wheels to rotate and translate on its own and without obstacles [12].

Figure 2. The Carnegie Mellon Uranus robot

II. PROBLEM STATEMENT

In standard cars there are various systems operated on the brake system such as hydraulic, pneumatic, air, mechanical, etc. But all of these brake systems receive signal or input power directly from the driver so it was fully operational. When a driver sees an obstacle in front of his vehicle, he gets upset or loses his temper. As a result many

opportunities are at risk. After an accident has occurred, there is no provision to reduce motor vehicle damage. Currently bumpers used in cars are solid types. These bumpers have a certain capacity and when the danger level is too high then the bumpers fail and these forces are transferred to the passengers. Therefore, this program will never reduce car and passenger injuries.

To overcome these unwanted effects, we need to build a Fire index and an automatic Pneumatic Bumpers system.

OBJECTIVES:

- Finding a Car Fire and show.
- Increasing the response time of the braking system.
- Improving pre-crash safety.
- Prevent the percentage of passenger injuries through external vehicle safety.

BEAUTY:

1. Simple construction.
2. Provides driver and car safety.
3. Reduces risk.

DISASTERS.

1. IR sensor range is small.
WAYS

This research / project will have the following **operational steps**:

1. Literature research.
2. Project identification
3. Research documentation of the project
4. Field service (car station)
5. Design stage
6. Drawing of the system
7. Procurement
8. Phase
9. Organizational organization
10. Trials and problem solving.
11. Testing
12. Conclusion
13. Project reporting and presentation.

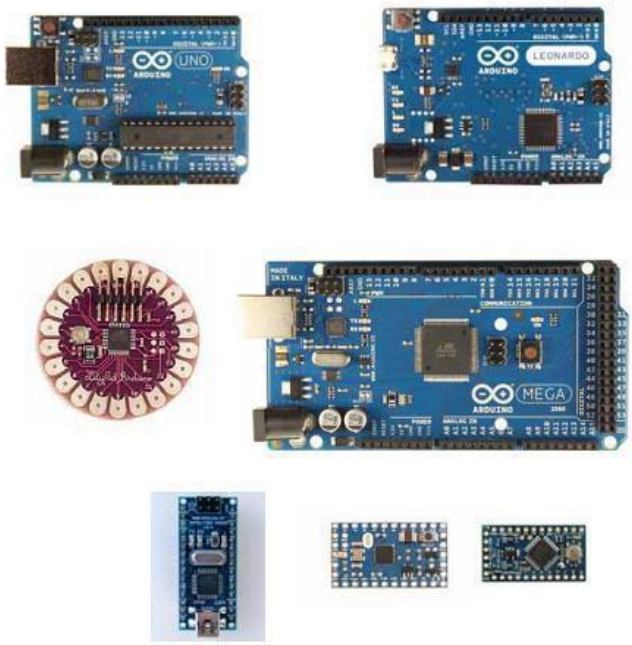
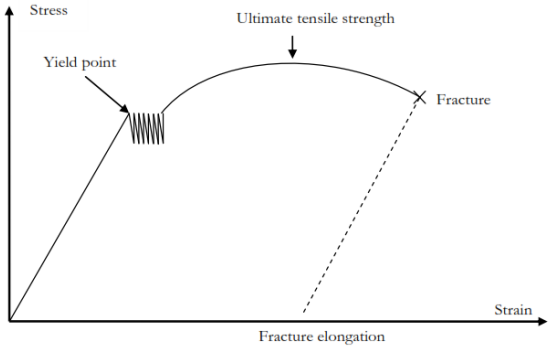


FIG. Some arduino families

III. METHODOLOGY

An automatic welding system is required for mass production as MAKE IN INDIA is at a very high level. So in order to calculate China's production rate we have to use that machine at a high level. So if the cost of the machine is kept low it will be much needed. The above process is therefore used to improve the default system.



5.1 Operating system

- Reading of various Research papers
- Project setup (Model line drawing)
- Frame size, File Specification
- part of setting the concept model
- A combination of different things
- Results & confusion about error in
- conceptual model

IV. CONCLUSION

- We have successfully identified the purpose of our project and created a 3d concept model using CATIA software.
- We have successfully calculated the various materials used.

A simple fire robot and a robot designed to use the Arduino Microcontroller based, wireless camera and flame sensor used to detect fire. After the fire is detected and the water pump is turned off. The purpose of this project is to develop a state-of-the-art robot that was specially designed to extinguish indoor fires that are difficult to reach. A leading robot designed as a result of this study communicates with a mobile phone with a serial port with a serial port and processes the analog data obtained from a flame control microcontroller to detect a fire in the environment during a fire in the area. In this work, an effective system for both hardware and software has been found. This work can be enhanced by:

a. Designing a robot to operate without a human being (automatically).
b. Many sensors can also be used with a robot (such as a gas sensor and a toxic sensor).
c. You are using XBee or Wi-Fi techniques instead of Bluetooth to expand the control area.
d. You are using a Wi-Fi camera to maximize monitoring

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