



AUTOMATIC FIRE EXTINGUISHER CAR

**By:
Jainil Bavishi
Vansh Agarwal**



PURPOSE OF THE PROJECT

- **The objective of this robot is to automatically respond to a fire incident and extinguish it, without requiring any manual intervention from the user.**
- **The extinguishing process primarily utilizes water, although other gases could be employed if necessary.**
- **The design of this system allows for easy modification of its purpose by altering either the sensors or the mode of transport, providing a high degree of flexibility.**
- **All these functionalities are carried out seamlessly without any direct need of input from user.**



COMPONENTS REQUIRED

Name of Instruments	Number of Instrument
Motor Wheels	4
Bo Motors	4
Flame Sensors	4
Arduino Uno R3	1
Motor Driver L293D	1
Mini Breadboard	1
Chassis "22*15"	1
Mini Servo	1
Mini Water Pump 3.7V	1
Water Pipe	1
18650 Battery	2
Battery Holder	1



THE WORKING

The working of the robot can be divided into two parts.

- **Transportation of the extinguisher(Here the pump)**
- **The Actual Fire Extinguisher**



THE CAR

- The pump is carried by a basic battery-powered car with four wheels, providing the robot with omnidirectional movement capabilities. This autonomy eliminates the need for user intervention in its operation.
- Guidance for the robot's movement is provided by the flame sensor, which directs the robot's path without requiring further input from the user.
- The car's movement is controlled by an Arduino, which processes input from the flame sensors. It utilizes its four motors to move in a specified direction based on the instructions received.
- The Arduino acts as the intermediary, receiving input from the flame sensors, processing it through its code and subsequently sending signals to the car.



THE WATER PUMP

- The water pump basically takes input from the Arduino and sprays the water
- The Arduino is modified in such a way that it only gives input when the pump is in range of the actual fire. This condition is to be implemented in the code.
- The Water reservoir is a basic water tank so that water supply is limited in this design, but the water tank can be modified to take water from larger sources by just changing the pump.

LOGIC FLOW

