

# Autonomous Fire Fighting Robot Using Arduino

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**Abstract:** *A fire outbreak is a hazardous act that leads to numerous consequences. Detecting a fire at an early stage and extinguishing it can aid in prevention of various accidents. Till now we rely on human resource. This often leads to risking the life of that person. Therefore, fire security becomes an important aspect to save human lives. In this a fire extinguishing robot has been proposed and designed which detects the fire location and extinguish fire by using sprinklers on triggering the pump. This robot uses flame sensors for accurate fire detection. This proposed model of Fire Extinguishing Robot using Arduino used to detect presence of fire and extinguishing it automatically without any human interference. It contains gear motors and motor driver to control the movement of robot when it detects any presence of fire and will automatically start the water pump to extinguish that fire breakout. This model robot has a water ejector which is capable of ejecting water at the fire breakout place. The water ejector pipe can be move towards the required direction using servo motor. The whole operation is controlled by an Arduino UNO. Fire-fighting is an important but dangerous occupation. A fire-fighter must be able to reach the situation quickly and safely extinguish the fire, preventing further damage and reduce fatalities. Technology has come to rescue this issue, fire-fighters and machines are now having more efficient and effective method of fire fighting. This is gives you the design idea of fire fighting robot using autonomous operation. The robotic vehicle is loaded with fire extinguisher and a water pump which is controlled over solenoid valve to throw water. An Arduino UNO is used for the desired operation. A water tank and fire extinguisher setup along with water pump is mounted on the robot body and its operation is carried out from the output through appropriate signal from the sensor. The whole operation is controlled by an Arduino UNO.*

**Keywords:** Fire Fighting Robot

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