

# AUTONOMOUS FIRE FIGHTING ROBOT

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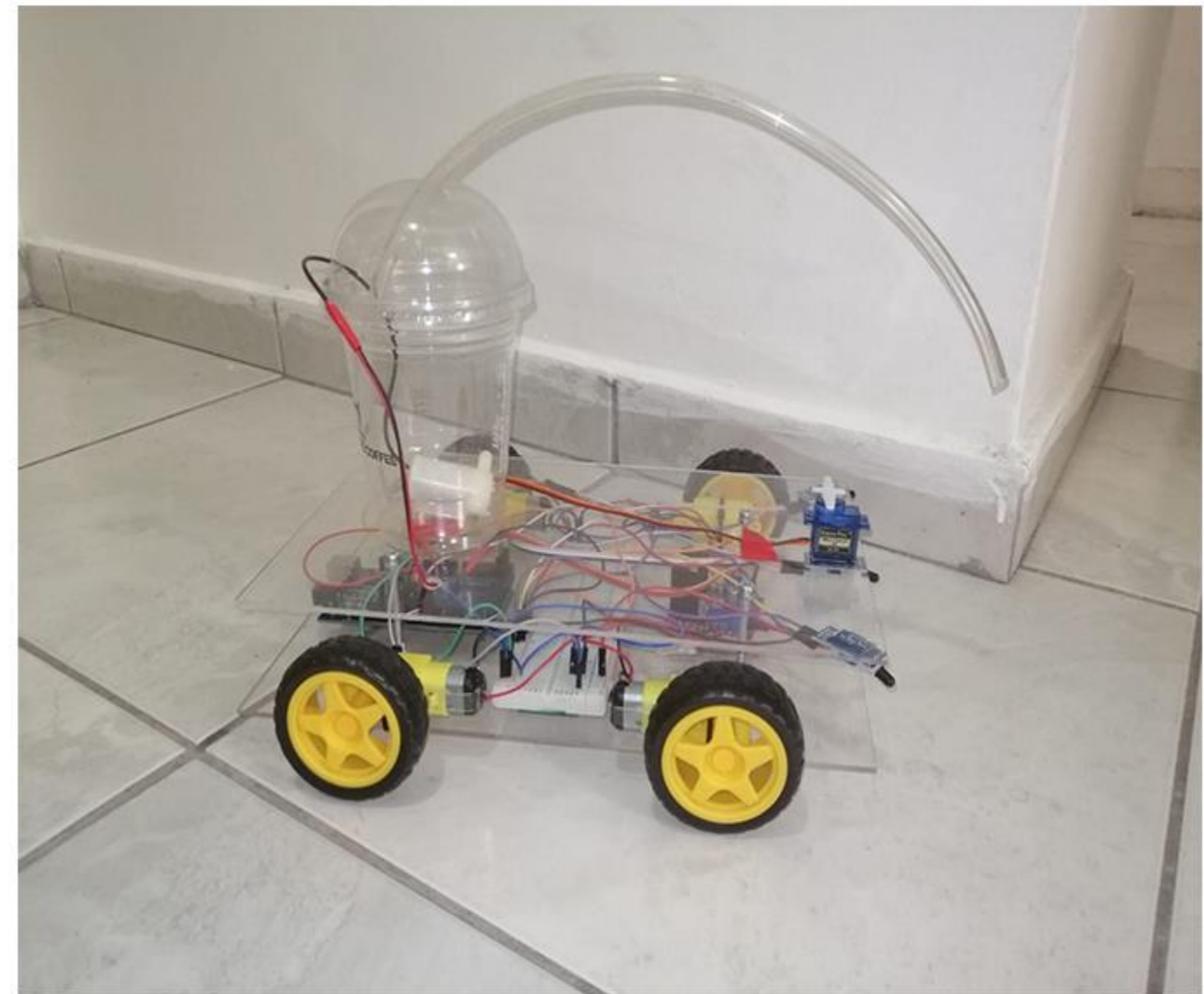


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## Abstract

An advanced fire fighting robotic system will be designed. The system detects and extinguishes fire. This fire fighting robotic system is powered by a microcontroller and it consists of the ultra-sonic sensor mounted on a servo motor for obstacles detection and free path navigation, it is also equipped with the fire flame sensor for detecting and approaching fire it also makes use of water tank and spray mechanism for extinguishing the fire. Water spraying nozzle is mounted on servo motor to cover maximum area. Water is pumped from the main water tank to the water nozzle with the help of a pump. This water pump needs driver circuit as it consumes a lot of current, much more than the controller provides.

## Mechanical Structure



## Main Components



Flame Sensor



Ultrasonic Distance Sensor



Arduino Mega 2560



Water Pump



DC Motor

## Block Diagram



## Conclusion

The fire extinguishing machine successfully detects the fire and extinguishes the fire by going in the direction of the fire autonomously in open and closed areas. Future developments can be extended to multiple firefighting robots working together. It can provide a more effective fight against large-scale fire events.

## References

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