

## Navigation

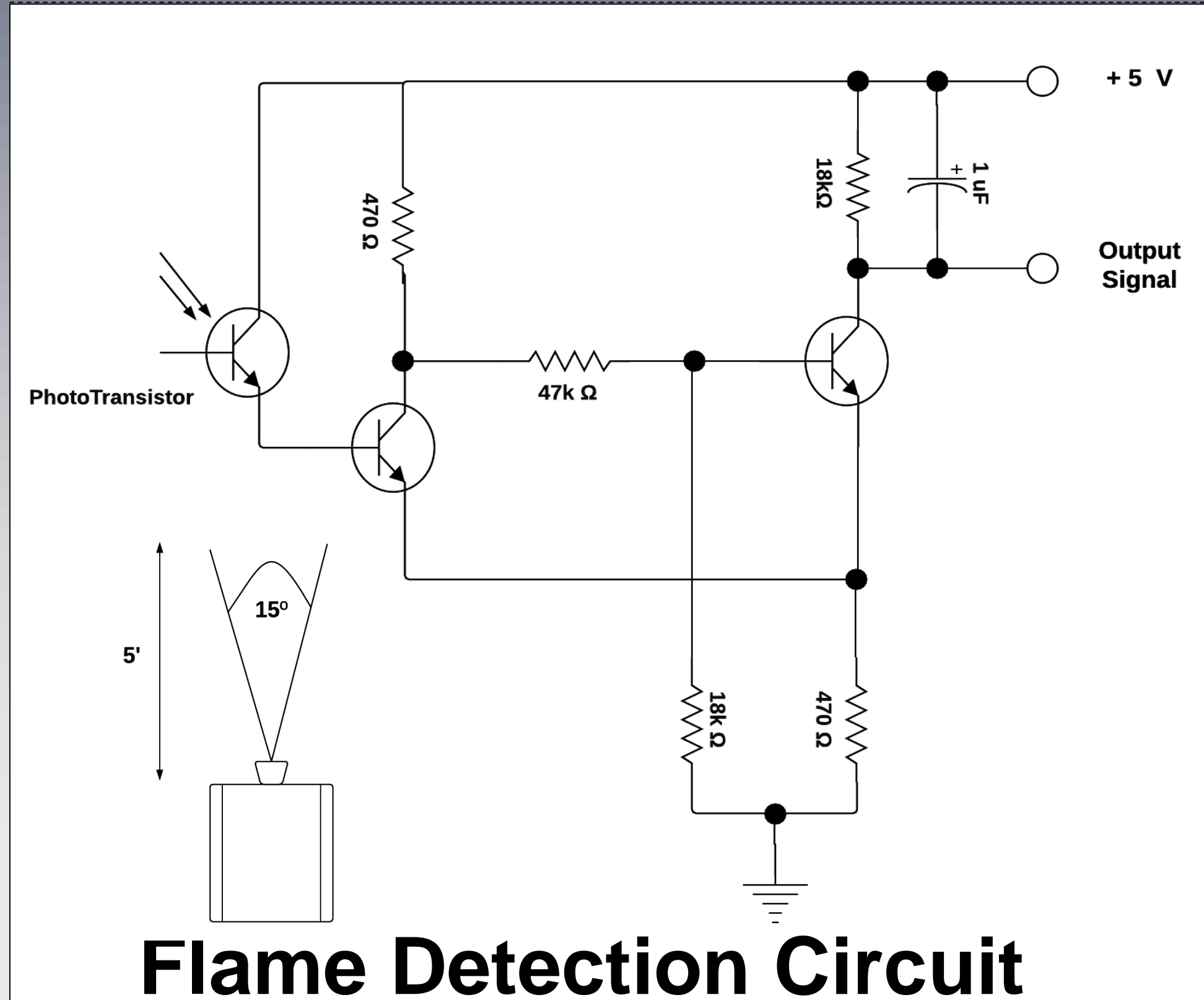
- 2 Arduino UNO microprocessors
  - 2 L293D DC motors
  - 3 ultrasonic sensors
  - Microphone module
    - Red LED

**Abstract:** This project is a small scale autonomous firefighting robot; to show a real life application of multidisciplinary engineering.

**Problem:** The robot has to autonomously move through a mock house, avoid obstacles, find a flame, and extinguish it.

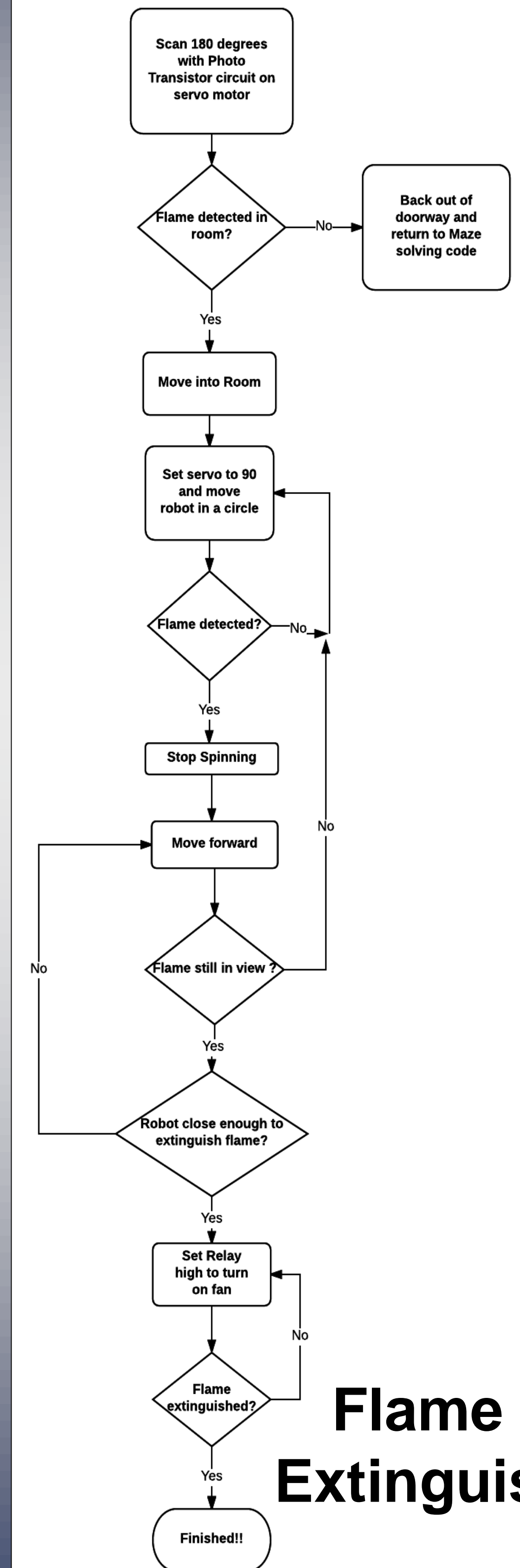
### Changes made through the design process:

- Two, 4 volt batteries switched to one, 12 volt lipo battery, for higher current draw and longer life.
- Flame detection circuit was redesigned to use a phototransistor instead of an LDR, for better range of view.
- Additional relay switching circuit for direct external power to propeller for better flame extinguish power.



## Flame Detection Circuit

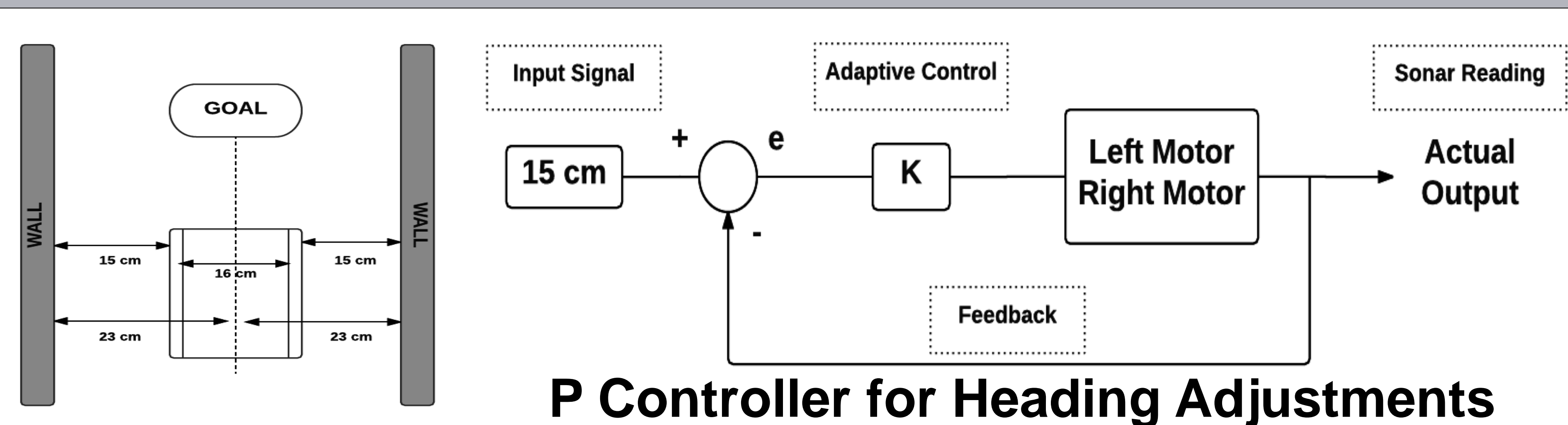
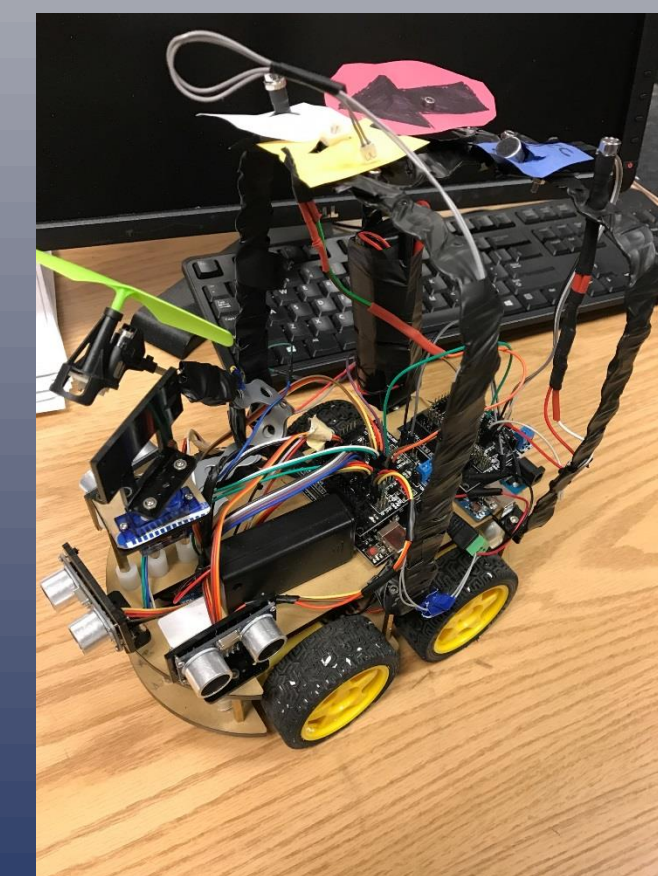
- Propeller
- Relay
- Fire detection circuit
- Red LED



## Flame Extinguish

## Results/Conclusion

- Trouble adjusting code based on battery power
- Four motor approach was not ideal
- Sensor code combination became an issue



## P Controller for Heading Adjustments