アーキテクチャー図

IBM DXチャレンジ

SBS情報システム

IBM Watson

Operator

7

JSON

6

8

10

9

WiFi

5

4

Server

ESP8266

Rescue Team

3

5

Camera

2

1

5

GPS

Servo, Rudder,
DC Motor

1

Ultrasonic
Sensor

Victim

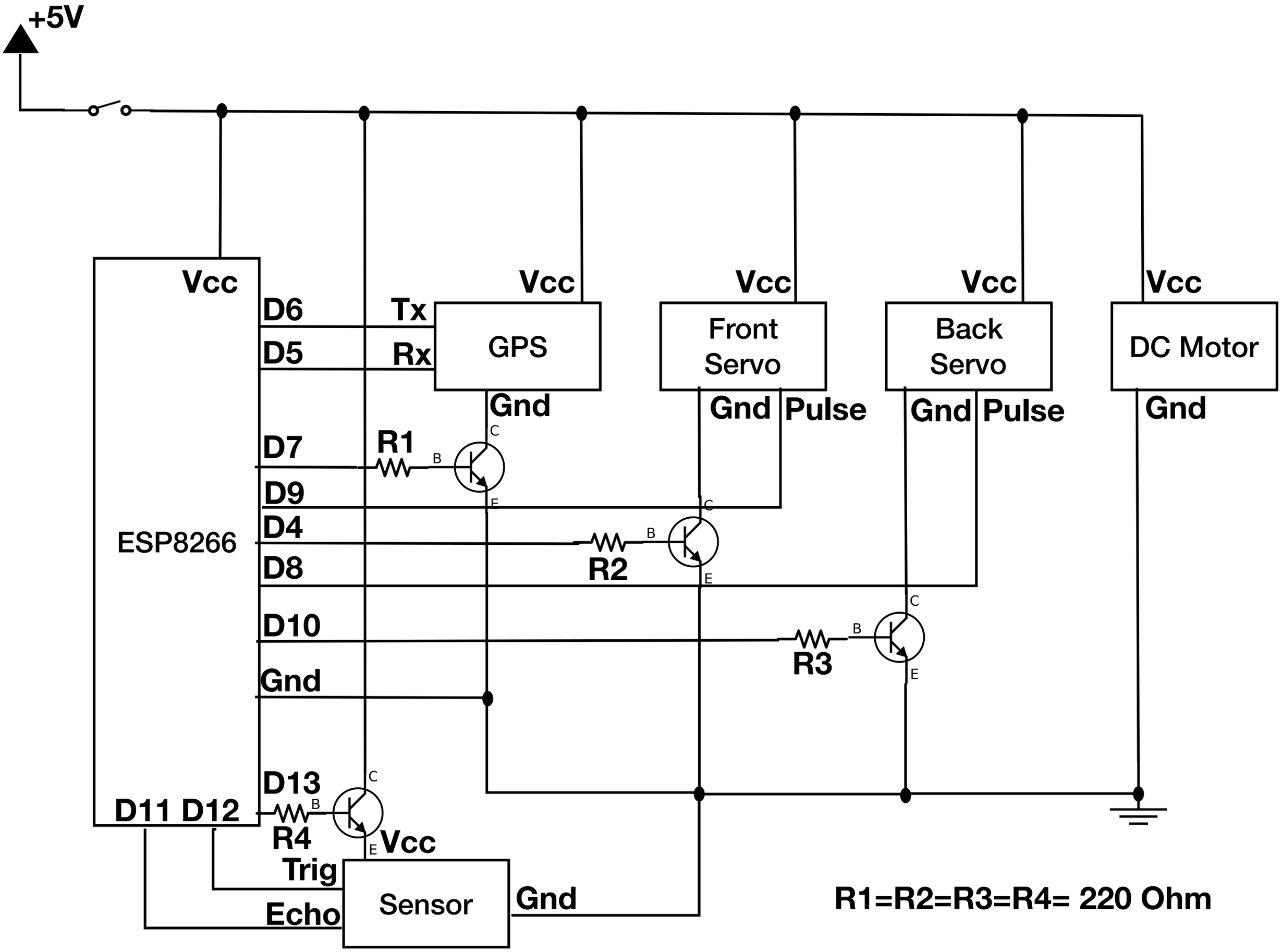
Inside the IoT Ship

1. **The ultrasonic sensor detects an object, then trigger the ESP8266.**
2. **ESP8266 order the rudder to change the course of the ship to avoid the ship hit the object.**
3. **ESP8266 collecting the current position from GPS (latitude, longitude).**
4. **ESP8266 calling API on server and attach the current position via WiFi.**
5. **Server got notice and start to download the image taken by the camera on the ship using WiFi.**
6. **Taken image is forwarding to IBM Watson.**
7. **IBM Watson replied with JSON contains image classification.**
8. **The server will send a message to the operator if the image classified as a victim, and the server will put a pin on a map to show the position of the victim.**
9. **The operator will organize the rescue Team, waiting for feedback if the rescue mission completed.**
10. **The operator closes the case as rescue mission accomplished.**

Circuit Diagram

IBM DXチャレンジ

SBS情報システム


+5V
Vcc
D6
D5
D7
D9
D4
D8
D10
Gnd
D13
D11 D12
ESP8266
Tx
Rx
GPS
Gnd
R1
R2
R3
R4
B
C
E
Front
Servo
Back
Servo
DC Motor
Gnd
Pulse
Vcc
Trig
Echo
Sensor
R1=R2=R3=R4= 220 Ohm