



# **Spotting the Unseen: Crafting a Visitor Tracker with ESP8266 and IR Sensors**



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# Introduction to Visitor Tracking

In this presentation, we will explore the fascinating technology of **visitor tracking** using **ESP8266** and **IR sensors**. This innovative approach allows us to monitor and analyze participants for objects entering and exiting the specified location / job

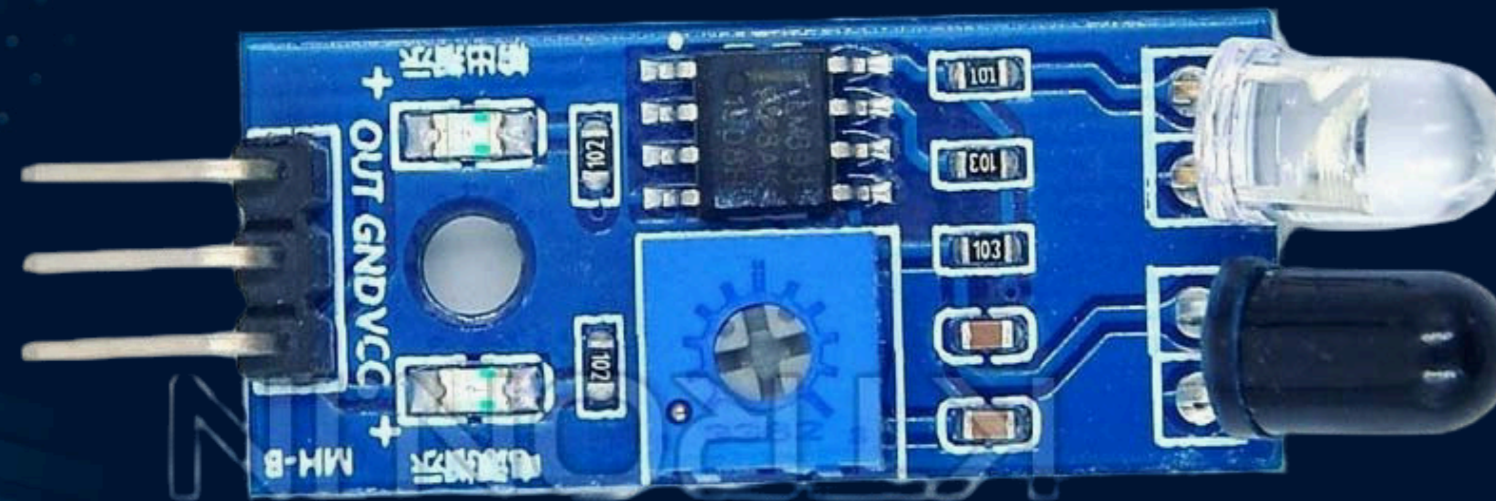




# Understanding IR Sensors

An IR proximity sensor works by applying a voltage to the onboard Infrared Light Emitting Diode which in turn emits infrared light. This light propagates through the air and hits an object, after that the light gets reflected in the photodiode sensor, hence the movement of the object can be detected

This movement is used as a trigger mechanism for counting the number of people or object entered or exited the whole program.



IR transmitter

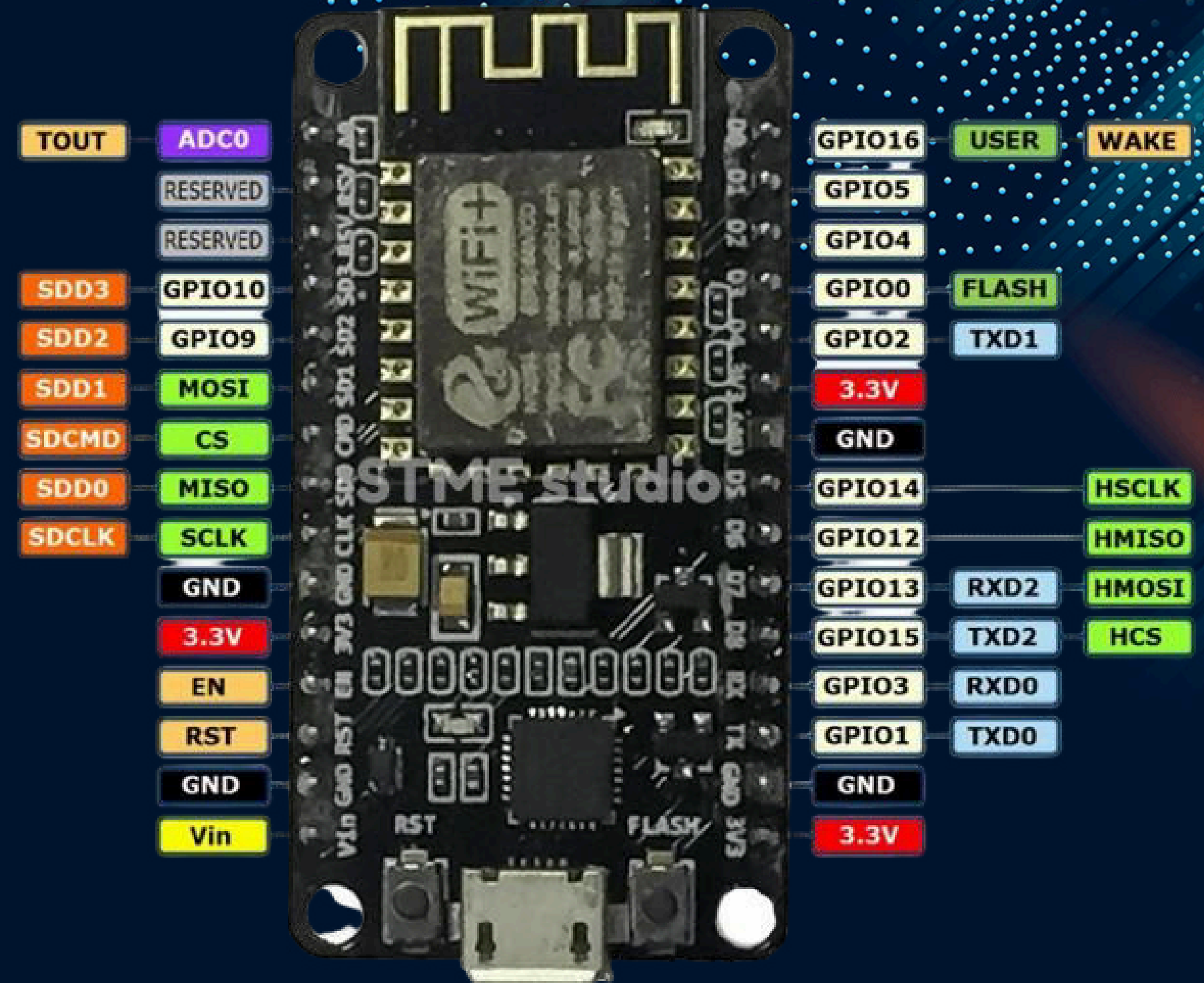
IR detector



# Setting Up ESP8266

To create our live monitoring system we use an opensource and easy programmable ESP8266 micro-controller and programmed it in such a way that whenever a object passes through the ir sensor it triggers the code and hence count is added

All the updates are updated in real time into a website hosted usign the ESP8266 so we it can be monitored from anywhere



# Programming the Tracker

The complete brain of our tracker is the esp8266 microcontroller which is used to monitor the inputs and host the webserver and display the current values of visitor count and all

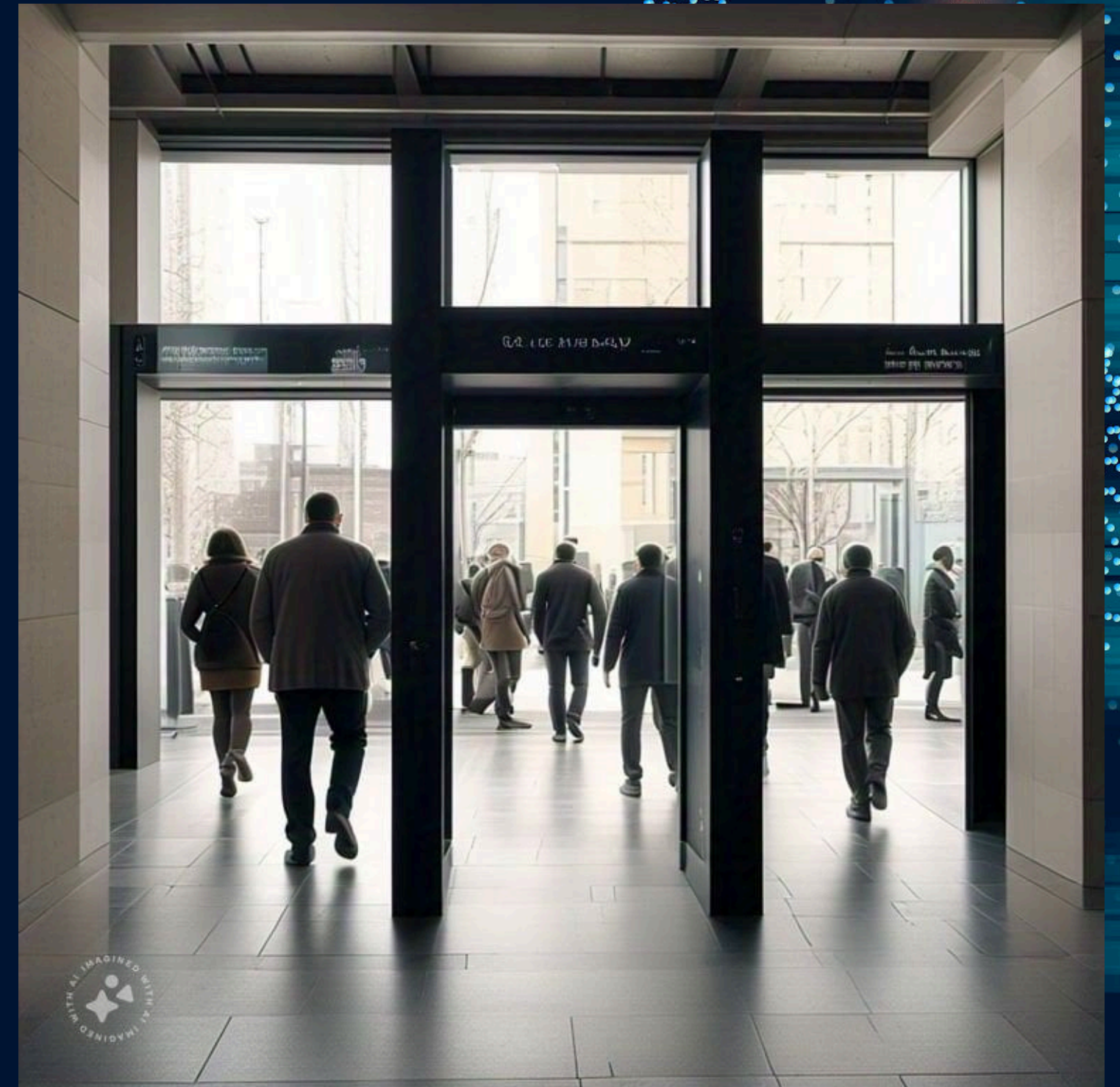
```
92 // Function to handle AJAX update (providing JSON data)
93 void handleUpdate() {
94     String jsonResponse = "{\"currentCount\": " + String(currentCount) + ", \"
95     server.send(200, "application/json", jsonResponse);
96 }
97
98 // Function to increase the count
99 void increaseCount() {
100     currentCount++;
101     totalVisitors++;
102     Serial.println("count increased");
103     delay(500); // Debounce delay
104 }
105
106 // Function to decrease the count
107 void decreaseCount() {
108     if (currentCount > 0) {
109         currentCount--;
110         Serial.println("count decreased");
111     }
112     delay(500); // Debounce delay
113 }
114
115 // Function to reset the counts
116 void resetCounts() {
117     currentCount = 0;
118     totalVisitors = 0;
119     Serial.println("Counts reset");
120     delay(500); // Debounce delay
121 }
122
```



# Applications of Visitor Tracking

The applications of our visitor tracker are vast, from **museums** and **exhibitions** to **retail stores**. Although now we have only used a IR detector to for the triggering mechanism , it can be replced bt ultrasonic sendot , RFID , NFC card and other sensors

This project has a lot of real world applications

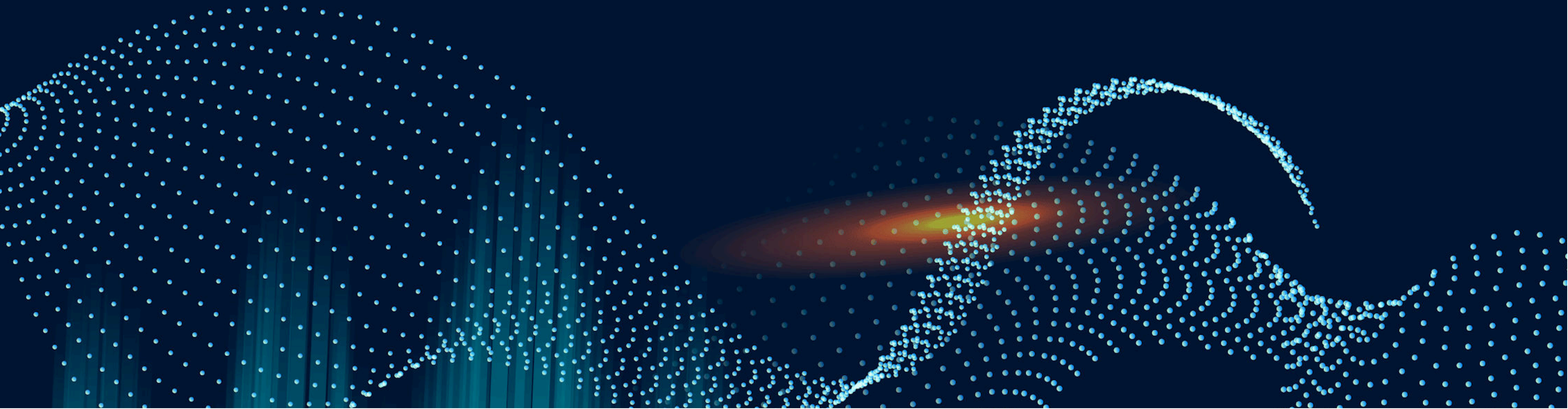




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# Conclusion and Future Prospects

In conclusion, crafting a visitor tracker with Arduino and IR sensors opens new avenues for understanding **human behavior**. As technology evolves, we can anticipate even more sophisticated tracking systems that will further enhance our ability to engage and interact with visitors.





# Thanks!

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