First trial

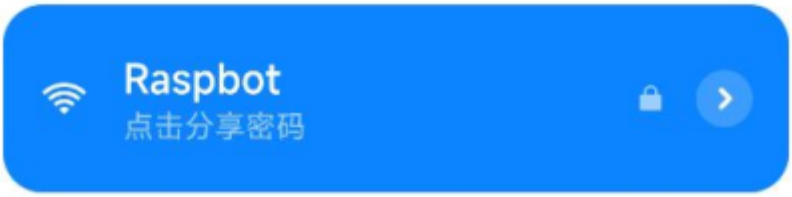
1. Install the mobile app

Android users scan the QR code by browser to download APP.

iOS users scan the QR code by browser or camera to download APP. Or search "YahboomRobot" in App Store to download APP.

2. Preparation before connection

1. After checking that the servo cables, battery power cables, camera USB cables, and Raspberry Pi cables are connected correctly and that the SD card with the factory image is installed correctly, turn on the power switch on the car's bottom plate.
2. The car starts for about 1 minute. After the system starts, the horn will sound three times, indicating that the car has started normally, and the hotspot name of the car that has been successfully turned on is "Raspbot".
   Connect to the car's hotspot wifi via your mobile phone: Raspbot, the password is: 12345678



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Special reminder:
The car's WIFI name: Raspbot
The car's wifi password: 12345678
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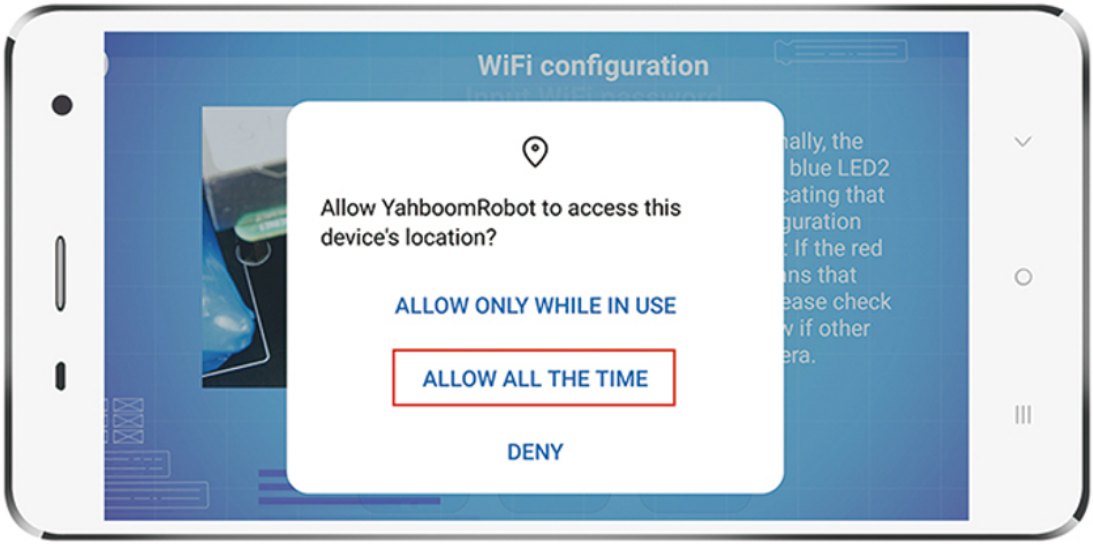
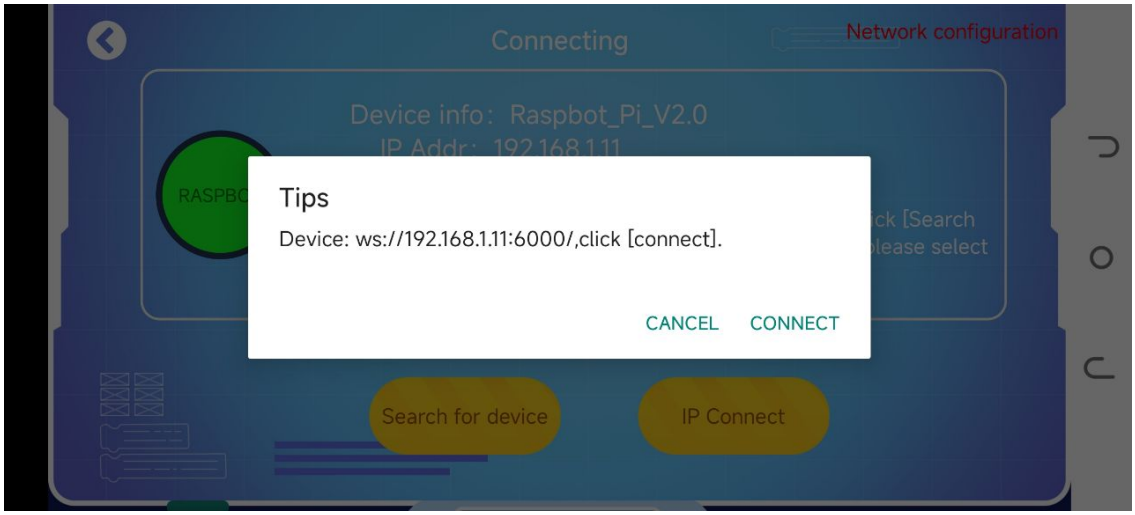
3. When you open the [YahboomRobot] APP for the first time, you need to select the corresponding product and select [AI Vision Robot] -> [RASPBOT] in the left column of the homepage.

4. The phone needs to turn on the [Location Information] service and click **Allow APP to use location information**.



5. After waiting for a while on this page, the raspbot car will be automatically searched.

6. If the search is successful, the connection page will appear, **click to connect**; if the automatic search fails, click the search device button several times



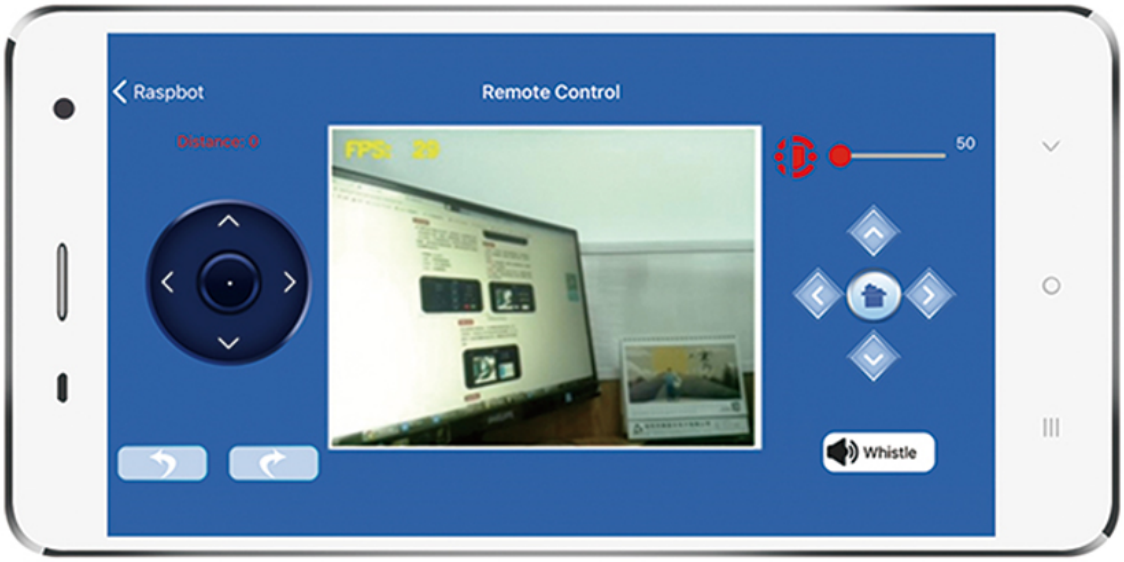
7. If the device is not searched for a long time, please check whether the mobile phone is connected to the car's wifi.
   (The following steps are generally not required) After connecting to the car's wifi, you can also try to use IP connection. "IP": Enter the car's IP address (192.168.1.11) This ip is the default IP address of the Raspberry Pi hotspot, "Port": 6000, "Video": 6001.

8. When you want to switch to connecting to the LAN WiFi, you need to log in to the Raspberry Pi and configure the WiFi you want to connect to. For how to connect to WiFi, please see the tutorial.

3. Introduction to APP functions

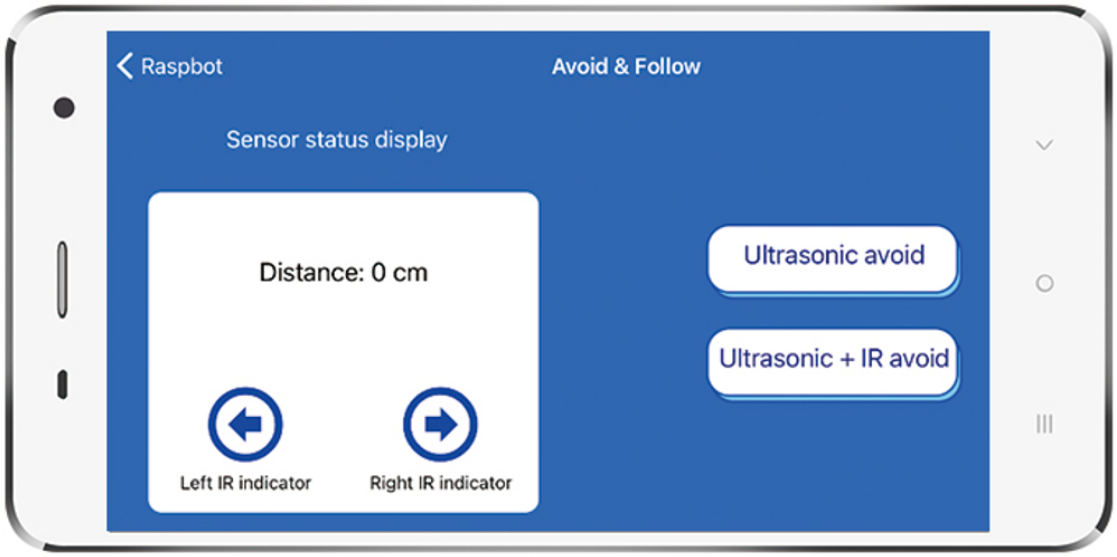
1. Remote Control
   The left joystick is for vehicle movement, and the right one is for camera gimbal control.
   The slider in the upper right corner controls the movement speed of the [Remote Control

Interface] and [Recognition Control Interface].



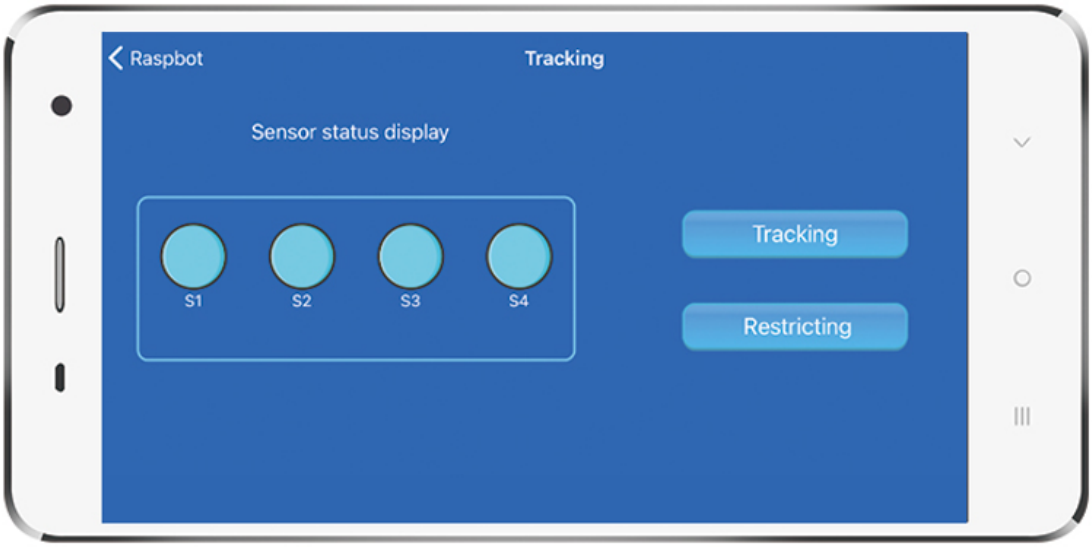
2. Avoid and Follow

- Sensor status display: Displays ultrasonic distance measurement
- Ultrasonic avoid: Only use ultrasonic ranging for obstacle avoidance. Click the button again to turn off the function.
- Ultrasonic + infrared avoid (**Raspbot V2 does not include this function**): Use ultrasonic ranging and infrared sensing to avoid obstacles at the same time. Click the button again to turn off the function.



3. Tracking

- Sensor status display: Displays the status of the tracking module S1-S4 lights. Black is on and white is off.
- Tracking: patrol the black line path on a white background. Click the button again to turn off the function.
- Restricting:Limit the movement of the car to the range of the black line on the white background. Click the button again to turn off the function.



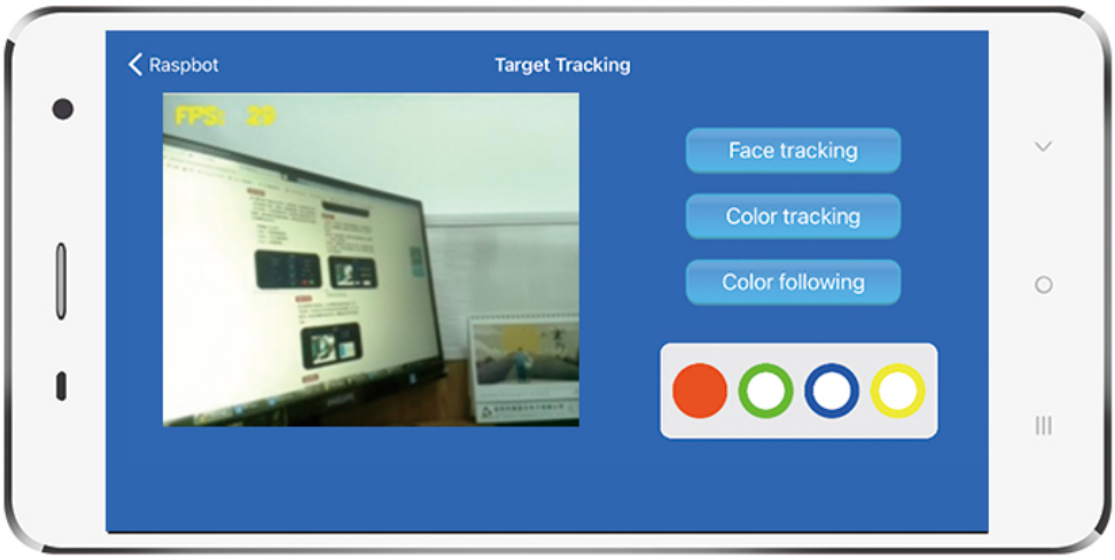
4. Object Detection

- Face Detection: Click [Face Detection], point your face towards the camera for recognition, and click the button again to turn off the function.
- Color detection: Click [Color Detection] and point the color to be identified towards the camera. It supports four colors: red, green, blue and yellow. Click the button again to turn off the function.
- Motion detection: Align the object for motion detection to the center of the camera, click the [Motion Detection] button, and a blue frame will appear in the middle. When the object in the frame moves, the frame will move with it. Click the button again to turn off the function.

5. Target Tracking

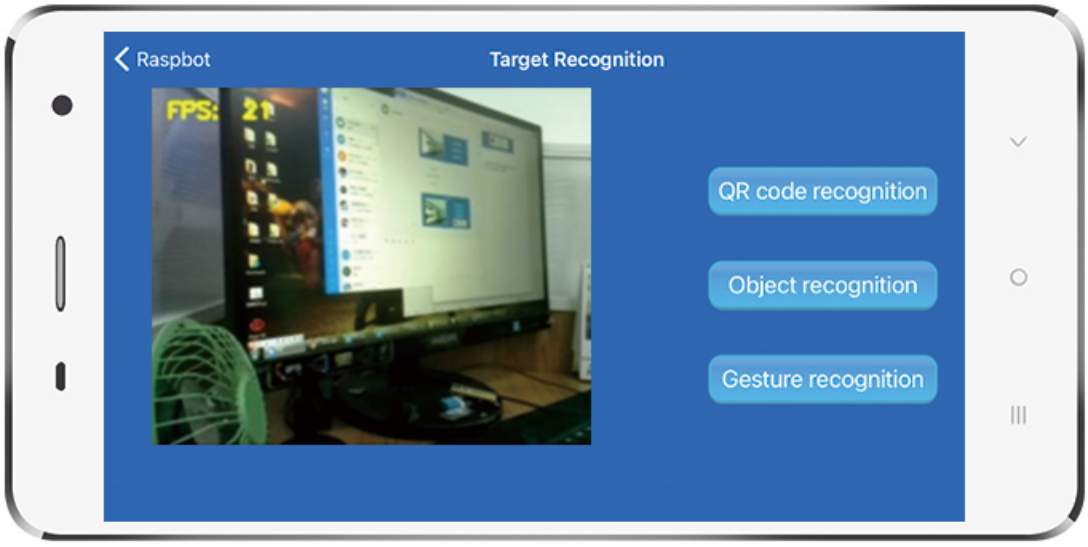
- Face Tracking: After clicking the [Face Tracking] button, point your face towards the camera and move slowly. The camera gimbal will follow the movement of your face. Pay attention to the impact of light on the recognition effect. Click the button again to turn off the function.
- Color tracking: Select the color to be tracked through the color selection bar below, then click the [Color Tracking] button, aim the color to be tracked at the camera, and then move slowly. The camera gimbal will track the corresponding color movement. Pay attention to the impact of light on the recognition effect. Click the button again to turn off the function.
- Color following: Place the robot on a movable surface, select the color to be tracked through the color selection bar below, and then click the [Color follow] button. Aim the object to be followed at the camera, and then move slowly. The robot will approach the recognized color,

and the gimbal will move up and down according to the recognized color. Click the button again to turn off the function.



6. target Recognition

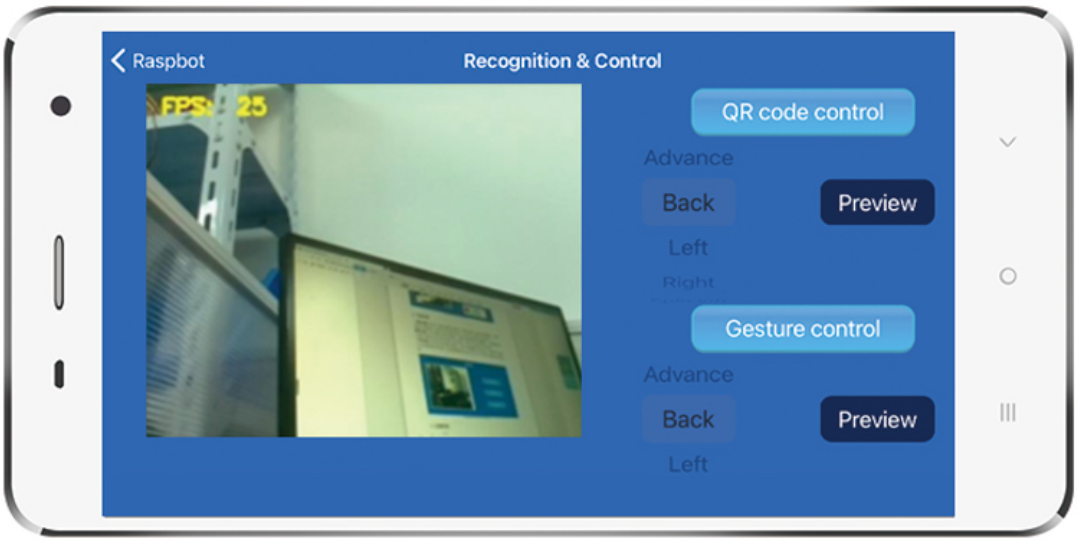
- QR code recognition: After clicking the [QR code recognition] button, point the QR code to be recognized at the camera. The QR code will be selected in the video screen and the corresponding characters will be displayed. Click the button again to turn off the function.
- Object recognition: After clicking the [Object Recognition] button, point the object to be recognized at the camera. The object will be selected in the video and the corresponding English name characters will be displayed. Click the button again to turn off the function.
- Gesture Recognition: After clicking the [Gesture Recognition] button, point your hand at the camera and make a gesture. The name of the recognized gesture will be displayed on the video screen. This function requires the connected WIFI to be able to access the Internet. Click the button again to turn off the function.



7. Recognition&Control

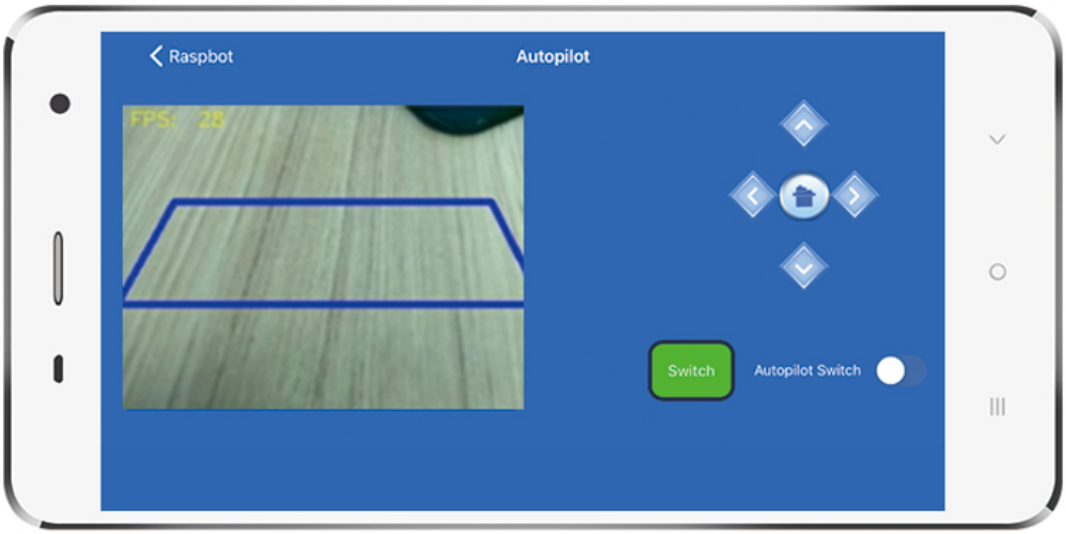
- QR code control: Click the [QR code control] button, select the corresponding movement through the movement bar, and click the [Preview] button to generate the corresponding QR code. Aim the QR code at the camera, and the robot will make the corresponding movement after recognition. Click the [QR code control] button again to turn off the function.
- Gesture Recognition Control: Click the [Gesture Control] button, select the corresponding movement through the movement bar, and click the [Preview] button to view the

corresponding gesture. Aim the camera and make the corresponding gesture. The robot will make the corresponding movement after recognition. Click the [Gesture Control] button again to turn off the function. T



8. Autopilot

- There are three modes for screen switching: normal screen, screen after perspective transformation, and screen after normalization with processing markings.
- After entering the autopilot interface, the servo gimbal will move to the default position. Note that the position shown in the blue box is the front position of the vehicle body. The bottom blue line cannot be too far from the front frame of the vehicle or on the vehicle body, otherwise the autopilot will not be able to patrol the line. If the deviation is too large, the gimbal direction can be controlled to the appropriate position, and then the autopilot switch can be turned on.



App remote control may fail

1. The APP screen can be seen, but the car cannot be controlled because the control process has been terminated by the mobile phone. Restart the APP and reconnect to the car.
2. The sensor data of the APP is not updated in real time because the phone sleeps and the process of receiving the sensor is terminated, resulting in the termination of the thread of sending data in the large program. In this case, you need to restart the app and the car.