



RASPBLOCK

AI smart robot

AI Omnidirectional Mobile Smart
Car Based on Raspberry Pi Platform



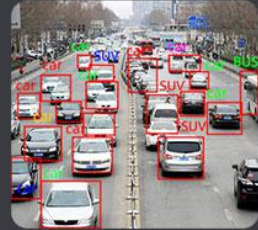
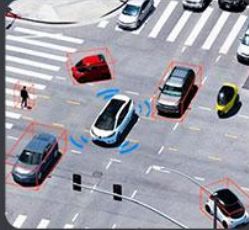
Equipped with Raspberry Pi 4B board

Raspberry Pi reaches new heights of AI. With strong performance support for Raspberry Pi 4B, AI computing power is greatly improved, and 4 configuration options of 2G/4G/8G/without board are provided by default



Powerful algorithm Professional course

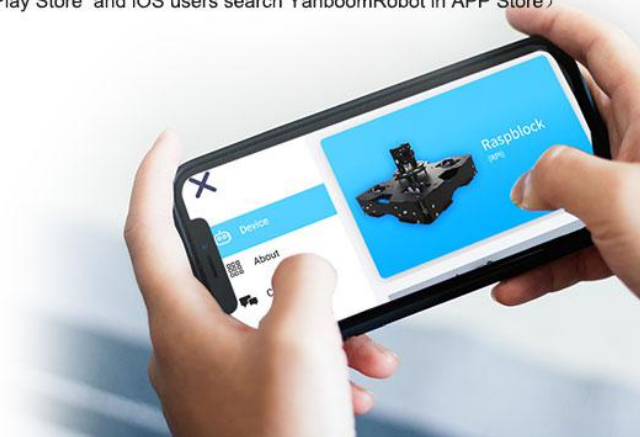
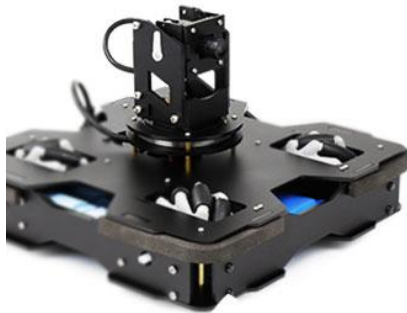
TensorFlow, KNN, CNN, SVM positional PID, incremental PID



Dual system APP remote control

Support iOS / Android phone

(Android users search YahboomRobot in Play Store and iOS users search YahboomRobot in APP Store)



360° omnidirectional movement

Raspblock is equipped with 4 Mecanum wheels with 360° omnidirectional movement to easily challenge various complicated routes!

* Gyro self-stabilization starts in real time



Surround Mode



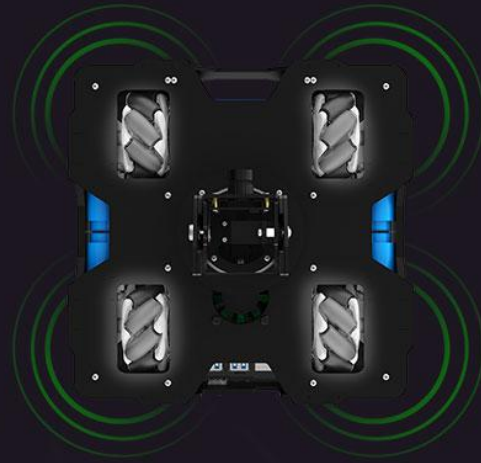
Pan mode



Self-stabilizing mode



Position mode



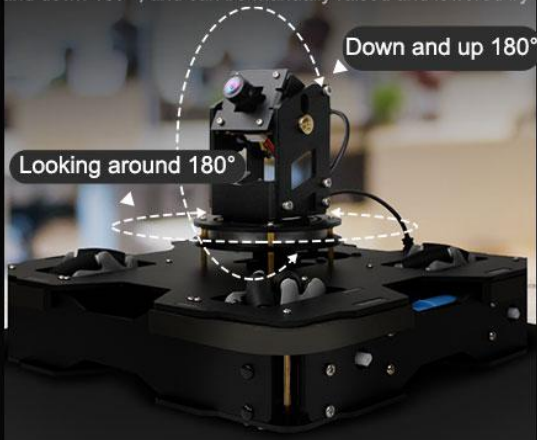
Artificial intelligence Autopilot

The robot corrects the image distortion through [Open Source CV](#), extracts the ROI area, removes the noise through blur processing, and then [binarizes](#) the image to find the position of the double line and calculate the actual center line. According to the deviation from the center line, the [PID algorithm](#) is used to calibrate the direction of the robot to achieve the effect of automatic driving.



3DOF camera platform

The camera platform automatically looks around 180°, automatically tilts up and down 180°, and can be manually raised and lowered by 50mm



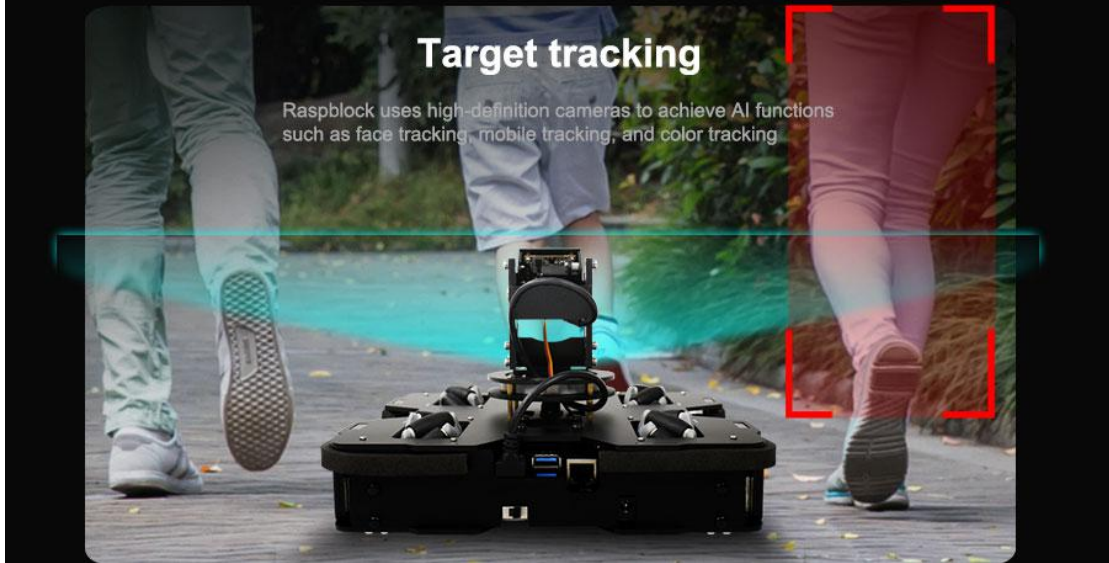
FPV real-time perspective Smooth WIFI transparent transmission

200W / 1080P / 120FPS (supportable) HD camera
Support iOS / Android dual system mobile phone



Target tracking

Raspblock uses high-definition cameras to achieve AI functions such as face tracking, mobile tracking, and color tracking



Object recognition

Raspblock can also realize AI recognition functions such as face recognition, color recognition, object recognition, gesture recognition, QR code recognition, etc.



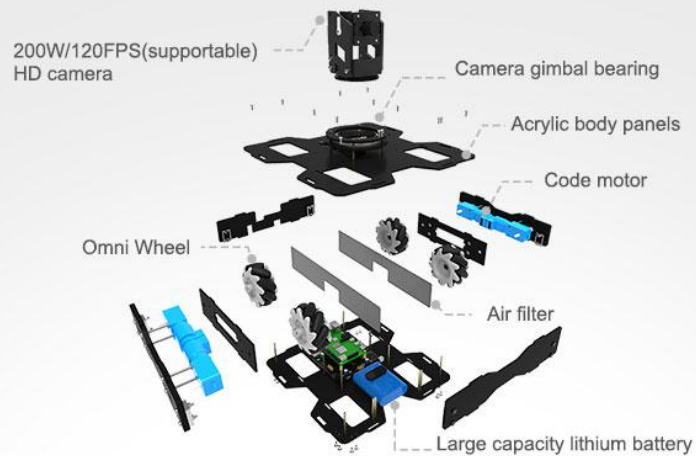
New programming tool Jupyter lab

Direct programming and debugging of web browser, in-depth development with Python as the programming language, and direct debugging of Raspblock omnidirectional smart car with OPEN SOURCE CV image processing library



Precision structure Professional accessories

Each part is carefully selected to ensure quality



Rich course materials

Raspberry Pi official linux system

Learn online and easily guide you into the AI world of the Raspberry Pi.



0.Instruction Manual



1.Installation video



2.First Trial



3.Raspberry Pi Basic course



4.OpenCV Basic course



5.Hardware Control course



6.AI Visual course



7.AI Voice course



Annex

Raspberry Pi Basic Course



Tools



1.Download and write the image.docx



2.Start Raspberry Pi system image.docx



3.Method of enter RaspberryPi system.docx



4.Remote transfer file.docx



5.Linux common commands and the use of vim editor.docx



6.Raspberry pi system backup.docx



7.About wiringpi library.docx



8.Configured as a router.docx



9.Serial port communicates with external devices.docx

OpenCV Basic Course+AI Visual Course



1.Introduction of OpenCV.docx



2.OpenCV image load and display.docx



3.OpenCV image rotation.docx



4.OpenCV image quality.docx



5.OpenCV image synthesis.docx



APP details



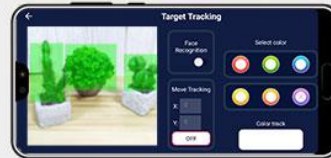
Remote Control



Mecanum Wheel



Demo Mode



Target tracking



Object Recognition



Autopilot

Standard PS2 remote control

In addition to the mobile phone APP remote control, we also presented a PS2 handle, which can be connected to a computer to remotely operate the Raspblock intelligent robot.



Feature:

Exquisite structural design in detail

- Bumper strip are pasted around the outside to prevent damage to the car body.
- Dust filter be installed on both sides of the internal Raspberry Pi board to prevent dust and extend the usage of the Raspberry Pi.
- The bearing design of the bottom of the camera platform ensures that the camera rotates stably and smoothly.
- L-type camera wiring is convenient to pass through the hole on the side of the car body and plug into the USB interface of the Raspberry Pi board.

Customized driver expansion board

- Integrated with MPU6050 gyroscope sensor, so that the car possess self-stabilization function.
- With the voltage detection function, and the voltage data will be returned to the mobile phone APP for real-time monitoring.
- Low-voltage alarm, anti-reverse connection socket, clear silk screen, prevent users from reverse connection.

Jupyter Lab tool + Python programming + OpenCV

- No need to install any software, programming and debugging directly through the web browser.
- Based on the popular Python programming language, cooperate with OpenCV for image processing.

Android/iOS multi-function APP

- Color recognition, target tracking, face detection, gesture/QR code recognition, voice broadcast and automatic driving, etc.,.
- Four different modes: surround, pan, auto-stabilization, position mode.
- Mecanum wheel debugging interface, which is convenient for users to learn relevant knowledge of omnidirectional movement.

Detail:

Product specifications	
microprocessor:	Raspberry Pi 4B Broadcom BCM2711
operating system:	Raspberry Pi official linux system is based on Debian
Programming language:	Python3
Input:	2 million high-definition wide-angle camera, gyroscope, encoder
Output:	Four independent motor interfaces, buzzer, horn, four PWM servo interface
Attitude calibration:	Gyro attitude calibration
PTZ rotation:	PWM servo 180 degrees left, right, up and down, manual lift
Remote control:	Mobile APP (WIFI), PS2 controller (WIFI)
Power scheme:	18650 battery pack (12.6V)
Life time: 180 minutes:	180 minutes
Safety protection:	reverse connection protection, overcurrent protection, low voltage alarm, voltage monitoring
Motor:	TT motor with code wheel*4
Communication mode:	WIFI communication
Trolley tire:	Omni Wheel
Assembly size:	235*235*150mm (Assembly size)
Assembly weight:	1420g

Package list:



Tutorial:

[Yahboom Raspblock AI smart car](#)