YAHBOOM

EDUCATIONAL SOLUTIONS FOR AI AND ROBOTICS

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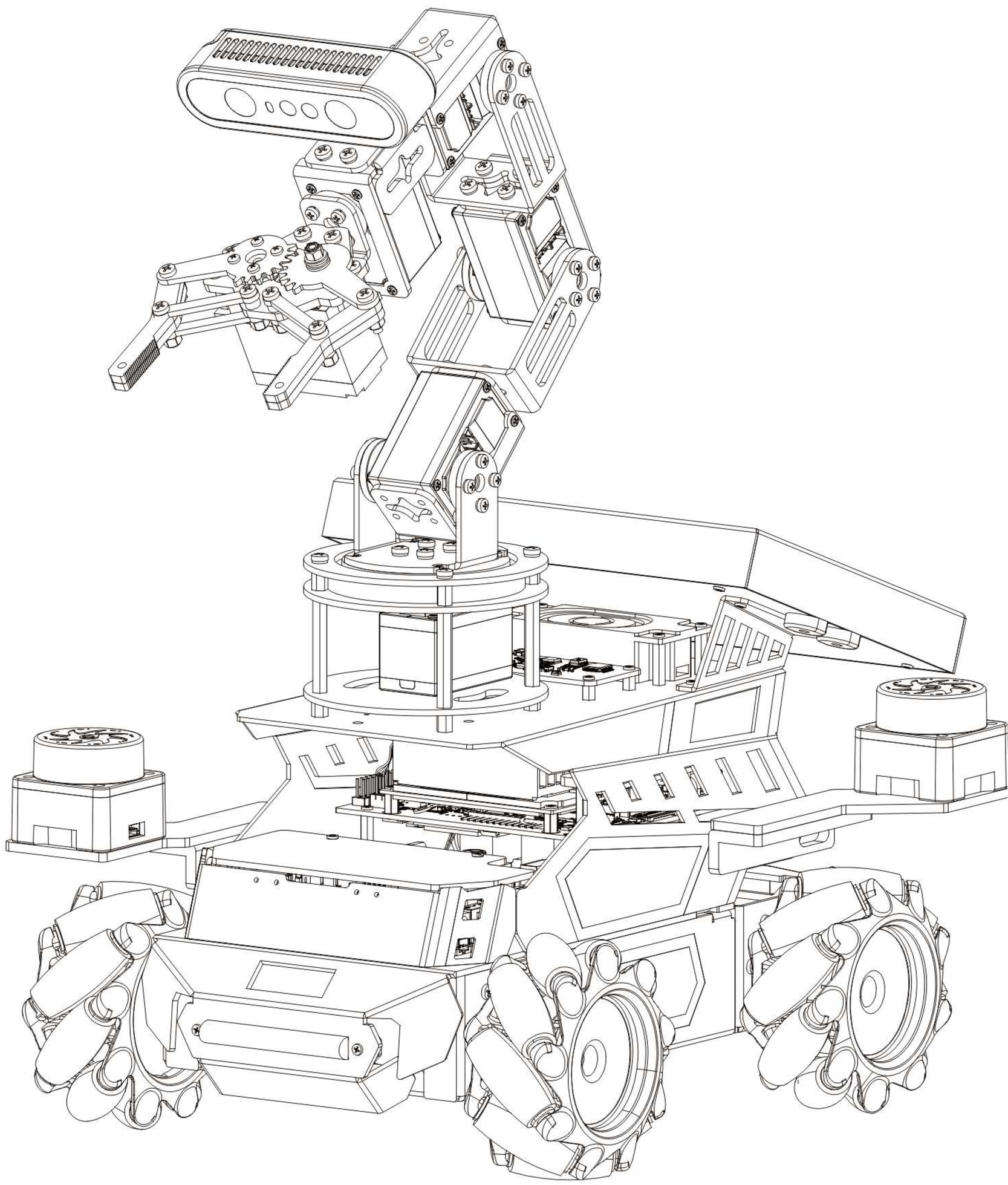


https://yahboom.en.alibaba.com/

ABOUT US

Shenzhen Yahboom Technology Co., Ltd. was established in 2015. It is a leading global provider of artificial intelligence and robotics education solutions, and a Chinese high-tech enterprise integrating independent research and development, mass production, and global sales. Adhering to the vision and mission of "lowering the threshold to creation and popularizing robotics education" , the company continuously researches and innovates robotics technology and teaching applications. We are committed to solving the problems of high learning thresholds and teaching difficulties in robotics by independently developing the rapidly deployable teaching equipment models and application systems. The company aims to promote the development of robotics education and cultivate professional talent in the field.

After years of dedicated development and accumulation, Yahboom now possesses a complete ecosystem of product hardware, programming control software, and online course robotics education, serving numerous students, teachers, and developers.
The company's main products include AI bionic robots, multi-morphic mobile platform robots, ROS system composite robots, embodied intelligent robots, and peripheral equipments. Yahboom strives to use its products and content to help universities strengthen their robotics engineering programs and improve the level of their experimental robot products and platforms.



ENTERPRISE HONOR







National high-tech enterprise

ISO9001 quality management system certification

Member of China Education Equipment Industry Association

50
Patent Certificates

53
Copyrights

51
Ttrademark Certificates

25
Award-Winning Trophies







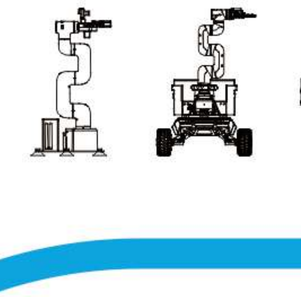
R&D History

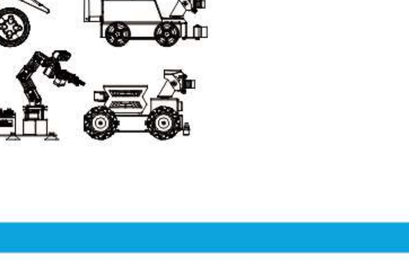
2024

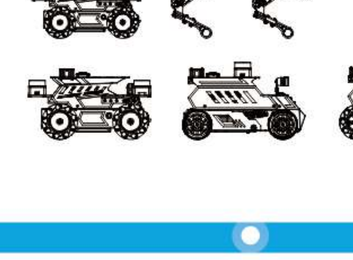
● Based on 3D visual recognition technology, launch the first 3D visual recognition grabbing robotic arm DOFBOT-PRO.
● Based on microROS wireless transparent transmission technology, release the lightweight ROS2 system car microROS Robot and the handheld LiDAR mapping device PALMSLAM.

2025

● Based on AI multimodal large modeling and 3D visual recognition technologies, we launched the ROSMASTER series of embodied intelligent robot development platforms, including 4-wheels drive, Mecanum wheels, Ackerman structures, and composite robotic arms.
● Based on AI large modeling technology, we launched the 15-DOF bionic quadruped robot dog DOGZILLA-Lite.









2023

Launched RDK X3 intelligent robot, bionic quadruped, hexapod navigation robot and composite mobile grasping robot based on ROS2 and model training algorithm

2022

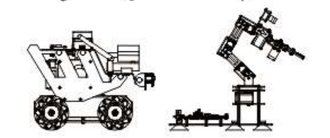
Launched SLAM mapping and navigation educational robots with various forms such as differential four-wheel drive, Mecanum wheels, Ackerman structures and quadrupeds based on ROS deeply development

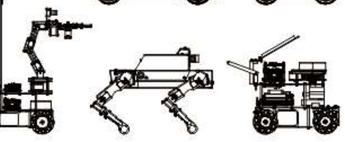
2021

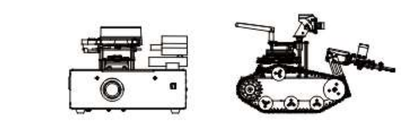
Launched ROS tracked educational robots based on ROS

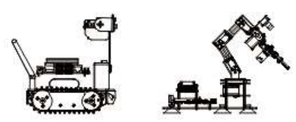
2020

Developed and designed bionic robotic arms, released six-degree-of-freedom robotic arms with AI visual recognition; based on Jetson Nano, launched autonomous driving robots trained by neural networks and models









2015

Yahboom was established

2016

Launched a series of basic electronic education products based on Arduino and STM32

2017

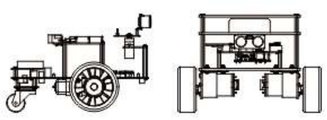
Launched first-person vision educational robot kits based on 51, STM32, Arduino and Raspberry Pi

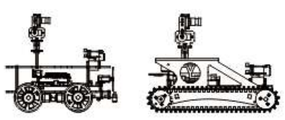
2018

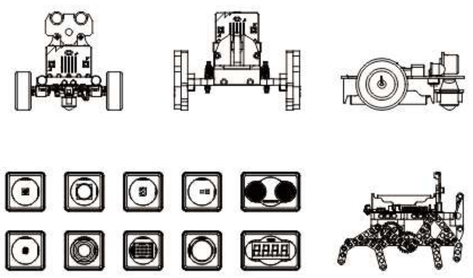
Launched K12 educational products with graphical programming such as smart cars, deformable building block kits, building block module kits based on Micro:bit

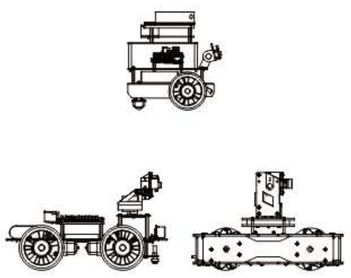
2019

Launched artificial intelligence visual recognition educational robots based on Raspberry Pi and Jetson









ROBOTICS EDUCATION SOLUTIONS

Future Trends: With the continuous development of science and technology, robotics technology has shown great potential and application prospects in various fields. From manufacturing to health care, from agriculture to daily life, the application scope of robots is becoming more and more extensive. In this era of booming development of robotics technology, the demand for related positions in robotics systems has also gradually increased, which has brought urgent and important needs to the talent training system related to the robotics field.

Job Requirements: With the advancement of technology, the era of Embodied AI is rapidly approaching. AI large models, such as ChatGPT and Tongyi Qianwen, provide underlying support for robots to achieve intelligent perception, autonomous decision-making, and even human-like interaction through general knowledge and emergent intelligence capabilities. The release of DeepSeek signifies that robot systems will acquire a "digital brain" with logical reasoning and continuous learning capabilities. Due to the scarcity of talent in this industry, there is a huge demand gap in the field of embodied intelligent robots. Core technical positions such as robot algorithm engineers and robot debugging engineers have become one of the most popular and promising employment directions.

Talent cultivation: In the context of the booming development of robots, it is particularly urgent and important to cultivate talents that adapt to market demand. This requires starting from the education level and providing systematic training and education. Quickly built teaching demos and robot application courses have become one of the key solutions to this problem. By offering these courses, students can be quickly introduced to the basic principles and application methods of robot system architecture, helping them to establish a solid technical foundation. At the same time, these courses can also cultivate students' ability to solve practical problems through practical operations and project practices, so that they can be competent for various robot system-related positions in their future work.

School-enterprise cooperation: The development of robotics education also needs to be closely integrated with industry needs. Cooperating with enterprises to carry out actual case studies and project cooperation can enable students to better understand the development trends and needs of the industry, so as to better adjust the educational content. In addition, conducting scientific research and innovation is also an important means to cultivate high-level robotics talents. Through scientific research projects, students can be trained to solve complex problems and enhance their competitiveness in the field of robotics.
In summary, by establishing a sound talent training system, opening up fast and configurable teaching demos and robotics application courses, and closely integrating education with industry needs, the market demand for high-level talents can be better met, and the further development and innovation of robotics technology can be promoted.





AI Wheeled Robotic Car



ROSMASRER A1
-P09-



ROSMASRER M1
-P11-



ROSMASRER M3
-/-



MicroROS-Pi5
-P13-



MicroROS ROBOT
-P13-



RASPBOT V2
-P15-



RDK ROBOT
-P17-



Transbot SE
-P18-



ROSMASRER X3
-/-



ROSMASRER R2
-/-



Transbot
-/-



NAVROBO navigation robot
-P28-

Robotic Arm



DOFBOT
-P19-



DOFBOT SE
-P19-



DOFBOT PRO
-P21-



JETCOBOT
-P22-

Composite Robotics



ROSMASTER M3 PRO
-P24-



ROSMASTER X3 PLUS
-26-



NAVROBO collaborative robot
-P28-

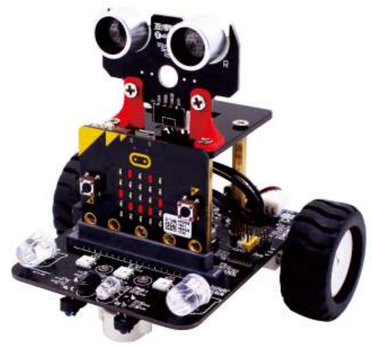
Programming Education Robotics



TNIY:BIT/PRO
-P45-



TNIY:BIT PLUS
-P45-



TNIY:BIT PLUS
-P46-



ROBODUINO V2
-47-



MSPM0智能小车
-/-



RASPBOT
-/-



WOM SENSOR KIT
-46-



SUPER:KET
-47-

Multi-legged Bionic Robotics



DOGZILLA S1/S2
-P30-



DOGZILLA Lite
-P32-



MUTO S2
-P34-



MUTO RS
-P34-

Wheeled Self-balancing Robotics



RIDER-Pi
-P36-



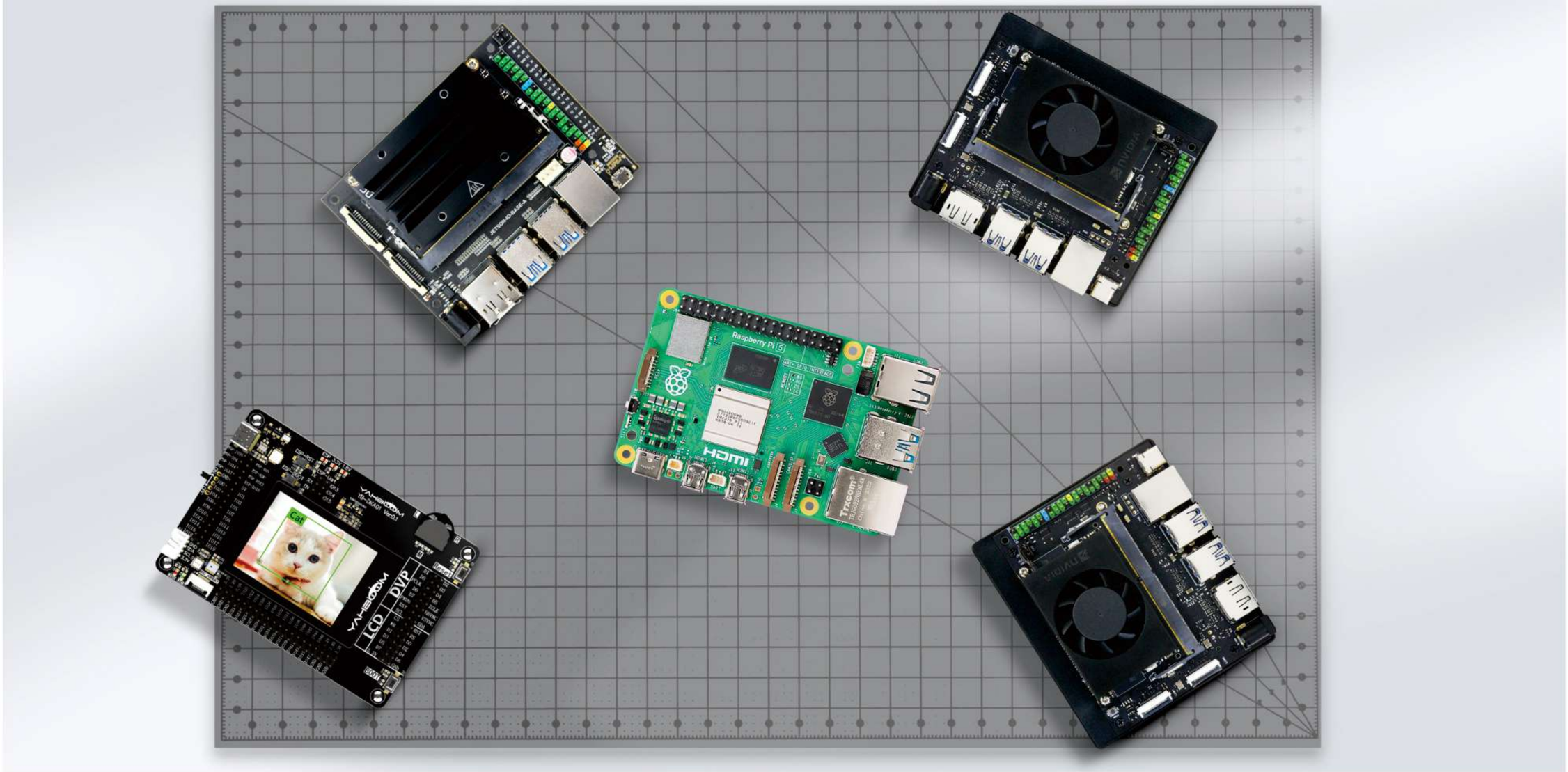
MicroROS平衡车
-P38-



STM32平衡车
-/-

ROS series developer kit

As technology develops, artificial intelligence is driving business change through automation, improved data analysis, and increased engagement. As a result, the ROS series of development boards are also gaining popularity around the world. These development boards are designed to accelerate artificial intelligence applications such as machine learning and computer vision, and are widely used in drones, robots, smart cameras, and other automated devices.



Raspberry Pi 4B vs Raspberry Pi 5 Prarmeter comparison

Model	Raspberry Pi 5	Raspberry Pi 4
CPU	Broadcom BCM2712 4 coreCortex-A76(ARM v8) 64-bitSoC Main frequency 2.4GHz	Broadcom BCM2711 4 coreCortex-A72(ARM v8) 64-bit SoC Main frequency 1.5GHz
GPU	800 MHz VideoCore VII Support OpenGLES3.1、Vulkan 1.2	600 MHz VideoCore VI Support OpenGLES3.0
Memory	LPDDR4X-4267 SDRAM	LPDDR4-3200 SDRAM
Storage	Micro SD card slot supports high-speed SDR104 mode	Micro SD card slot
Ethernet port	Gigabit Ethernet	
USB interface	2xUSB3.0, supports 5Gbps synchronous operation 2xUSB 2.0	2xUSB 3.0 2xUSB 2.0
CSI interface	2X4lane MIPI Camera Or Display Bidirectional transmission interface	1X2lane MIPICamera 15pin 1X2lane MIPI Display 15Pin
DSI interface	Supports dual 4Kp60 and HDR	Support single 4Kp60 and dual 4Kp30
HDMI	1pcs PCIe2.0X1 interface FPC connector	X
PCIE	No	Yes
Audio and video interfaces	5V/5A DC via USB-C interface (support PD)	5V/3A DC via USB-C interface (Not support PD)
Power input	5V/5A DC via GPIO interface	5V/3A DC via GPIO interface
Other interfaces	POE via a separate new POEHAT	POE through independent POEHAT
Power switch	On/off switch button	X
Real-time clock (RTC)	RTC battery connector (2 pins JST)	X
UART	Dedicated UART interface (3 pins JST)	X
Fan interface	PWM control and tacho Feedback(4 pins JST)	X
Size	85mm X 56mm	

Comparison of all JETSON series

Model	Jetson Nano 4GB	Jetson Orin Nano 4GB	Jetson Orin Nano 8GB	Jetson Orin NX 8GB	Jetson Orin NX 16GB	Jetson AGX Orin 64GB
AI computing power	0.5TFLOPS (FP16)	20 TOPS (INT8)	40 TOPS (INT8)	70 TOPS (INT8)	100 TOPS (INT8)	275 TOPS (INT8)
GPU	128 cores NVIDIA Maxwell™ GPU	512 cores NVIDIA Ampere architecture GPU with 16 Tensor Cores	1024 cores NVIDIA Ampere architecture GPU with32 Tensor Cores	1024 cores NVIDIA Ampere GPU with32 Tensor Cores	1024 cores NVIDIA Ampere GPU with32 Tensor Cores	2048 cores NVIDIA Ampere GPU with64 Tensor Cores
GPU maximum frequency	921MHz	625 MHZ	625 MHZ	765 MHZ	918 MHZ	1.3 GHz
CPU	4 cores Arm® Cortex®-A57 MPCore processor	6 cores Arm® Cortex®-A78AE v8.2 64 bit CPU1.5MB L2 + 4MB L3		6 cores NVIDIA Arm® Cortex A78AE v8.2 64 bit CPU 1.5MB L2 + 4MB L3	8 cores NVIDIA Arm® Cortex A78AE v8.2 64 bit CPU 2MB L2 + 4MB L3	12 cores NVIDIA Arm® Cortex A78AE v8.2 64 bit CPU 3MB L2 + 6MB L3
CPU maximum frequency	1.43GHz	1.5 GHz		2 GHz		2.2 GHz
DL accelerator	/	/		1x NVDLA v2.0	2x NVDLA v2.0	2x NVDLA v2.0
DL maximum frequency	/	/		614 MHZ		1.6 Ghz
Memory	4 GB 64 bit LPDDR4 25.6GB/s	4GB 64 bit LPDDR5 34 GB/s	8GB 128 bitLPDDR5 68 GB/s	8 GB 128 bit LPDDR5 102.4 GB/s	16 GB 128 bit LPDDR5 102.4 GB/s	64GB 256 bit LPDDR5 204.8 GB/s
Store	16GB eMMC 5.1	Support for external NVMe				64GB eMMC 5.1
Video encoding	1x 4K30 2x1080p60 4x1080p30 4x720p60 9x720p30 (H.265 & H.264)	1-2 CPU kernel support 1080p30		1x 4K60 | 3x 4K30 | 6x 1080p60 | 12x 1080p30 (H.265) 1x 4K60 | 2x 4K30 | 5x 1080p60 | 11x 1080p30 (H.264)		2x 4K60 | 4x 4K30 8x 1080p60 | 16x 1080p30 (H.265) 2x 4K60 | 4x 4K30 7x 1080p60 | 15x 1080p30 (H.264)
Video decoding	1x 4K60 2x 4K30 4x 1080p60 8x 1080p30 9x 720p60 (H.265 & H.264)	1x 4K60 (H.265) 2x 4K30 (H.265) 5x 1080p60 (H.265) 11x 1080p30 (H.265)		1x 8K30 | 2x 4K60 | 4x 4K30 | 9x 1080p60| 18x 1080p30 (H.265) 1x 4K60 | 2x 4K30 | 5x 1080p60 | 11x 1080p30 (H.264)		1x 8K30 | 3x 4K60 | 6x 4K30 12x 1080p60 | 24x 1080p30 (H.265) | 1x 4K60 | 3x 4K30 7x 1080p60 | 14x 1080p30 (H.264)
CSI camera	Support up to 4 cameras 12 lanes MIPI CSI-2 D-PHY 1.1 (up to 18Gbps)	Supports up to 4 cameras (8 via virtual channels***) 8 lanes MIPI CSI-2 D-PHY 2.1 (up to 20Gbps)		Supports up to 4 cameras (8 via virtual channels***) 8 lanes MIPI CSI-2 D-PHY 2.1 (up to 20Gbps)		Support up to 6 cameras (16 via virtual channels**) 16 lanes MIPI CSI-2 D-PHY 2.1 (up to 40Gbps) | C-PHY 2.0 (up to 164Gbps)
PCIE*	1x4 (PCIe Gen 2)	1x4 + 3x1 (PCIe Gen3, Root Port & Endpoint)		1x4 + 3x1 (PCIe Gen4, Root Port & Endpoint)		Support up to 2x8+2x4+2x1 (PCIe Gen 4, Root Port & Endpoint)
USB*	1 USB3.0 interface (5Gbps) 3 USB2.0 ports	3 x USB 3.2 Gen 2 (10 Gbps) 3 USB 2.0 ports				3 x USB 3.2 Second generation (10Gbps) 4 USB2.0 ports
Network	1x Gigabit Ethernet					1x Gigabit Ethernet 1x 10GbE
Display	DP + HDMI	4K30 DP + HDMI		8K30 DP + HDMI		8K60 DP+HDMI
Other IO	3 UARTs, 2 SPIs, 2 I2S, 4 I2C, Multiple GPIOs	3 UARTs, 2 SPIs, 2 I2S, 4 I2Cs, 1 CAN, DMIC & DSPK, PWM, Multiple GPIOs				4 UARTs,3 SPIs,4 I2S, 8 I2C,2 CAN,PWM, DMIC & DSPK, Multiple GPIOs
Power	5W - 10W	7W - 10W	7W - 15W	10W - 20W	10W - 25W	15W - 60W
Size	69.6mm x 45mm 260-pin SO-DIMM connector					100mm x 87mm 699-pin connector Integrated heat transfer plate

>> AI Wheeled Robotic Car

ROSMASTER A1

ROSMASTER A1 is an Embodied AI robot developed by Yahboom for ROS educational scenarios. It adopts Ackerman chassis, integrates high-performance hardware such as: AI large-model voice module, 3D depth camera, 200W high-definition camera gimbal, and a TOF LiDAR. This enables applications such as robot motion control, SLAM mapping and navigation, AI visual interaction, and voice interaction. Combining cutting-edge AI large-model technology, ROSMASTER A1 can integrate visual, voice, and text information, possessing environmental perception, task planning, and dynamic execution capabilities. It innovatively adopts a dual-model inference architecture, with clear division of decision-making and execution, solving the problem of logical confusion in traditional single-model systems. It also supports free dialogue interruption, dynamic feedback inference, and customizable expansion of the RAG knowledge base, further enhancing semantic understanding and intent recognition capabilities to meet diverse teaching and research needs.



AI Multimodal Large Model

The ROSMASTER A1 deploys a multimodal AI large model, which can be connected to the Tongyi Qianwen large model platform in real time. It integrates text and multimodal technologies, adopts a dual-mode inference architecture and dynamic feedback mechanism, and has the ability to engage in free dialogue and understand the environment. It can listen and speak, then achieve a more intelligent interactive experience.

Ackermann Steering Chassis

Ackermann steering is a modern automotive steering system. The ROSMASTER A1 uses an aluminum alloy Ackermann chassis structure. When the car turns, the inner and outer wheels turn at different angles, with the inner tire having a smaller turning radius than the outer tire.

Embodied AI Scenes Applications

Equipped with high-performance hardware, it can accurately perceive the surrounding environment. Through deep integration of multimodal large models and dual-model inference architecture, it can autonomously plan actions and flexibly execute tasks, achieving advanced human-computer collaboration and intelligent task processing, bringing a more natural and efficient human-computer interaction experience.

SLAM Mapping and Navigation

Equipped with a high-precision TOF LiDAR, fusing encoder and IMU gyroscope data, it achieves high-precision mapping and navigation. It supports multiple mapping algorithms combined with relocation and navigation technology, and features single-point/multi-point navigation capabilities.

3D Depth Vision Recognition [Superior/Ultimate Version]

The 3D structured light depth camera generates depth images and point cloud data, accurately acquiring depth information of target objects and enabling precise distance and volume calculations. Combined with radar data, it can construct high-precision 3D color maps, supporting more accurate environmental perception and intelligent navigation.

AI Large Model Integration for Autonomous Driving

By integrating a multimodal large-scale model, a visual autonomous driving model, and the ROS2 road network planning system, the A1 can achieve advanced intelligent autonomous driving on a sandbox map. It supports autonomous route planning, accurately reaching its destination and efficiently completing tasks.

Main controller	Raspberry Pi 5 (Raspberry Pi OS + Docker + ROS2 Humble)
	Jetson Nano B01 (Ubuntu18.04 LTS + Docker + ROS2 Humble)
	Jetson Orin Nano SUPER (Ubuntu 22.04 LTS + ROS2 Humble)
Storage	Raspberry Pi 5: 128GB TF card
	Jetson Nano B01: 128GB USB drive
	Jetson Orin Nano SUPER: 256GB SSD
Programming language	Python
Input	Nuwa-HP60C depth camera / 200W high-definition camera gimbal / T-mini Plus lidar / Slamtec CI lidar
	AI large language model voice module, USB wireless gamepad, nine-axis MUI sensor, motor speed encoder
Output	200W high-definition camera gimbal, Ackermann steering servo, 2 x 520 metal motors, OLED display screen, buzzer, integrated speaker
Working time	3 hours (working time varies depending on usage conditions)
Power supply solutions	12.6V 6000mAh battery pack (with protection board)
Power connector	DC 4.0*1.7 power connector
Safety Protection	Six-fold protection: overcharge, overcurrent, overdischarge, short circuit, undervoltage, and overvoltage protection.
Servo motor solution	Gimbal servos (2 x 9G high-quality digital servos)
	Steering servo (20kg metal digital servo)
Motor solutions	1:56 high-torque 520 encoder metal motor * 2
Remote control method	PC computer, wireless controller, mapping and navigation app (iOS/Android)
Communication methods	WiFi network (local area network/access point)
Vehicle body material	Carbon oxide sand aluminum alloy
Dimension	Standard/Superior Version: 201.4 x 277.8 x 174.69 mm
	Ultimate version: 201.4 x 277.8 x 182.2 mm
Weight	2.23-2.29 kg (Weight may vary depending on the selected configuration)



» AI Wheeled Robotic Car

ROSMASTER M1

ROSMASTER M1 is an Embodied AI robot developed by Yahboom for ROS education scenarios. It adopts a Mecanum wheel motion chassis and supports 360° omnidirectional movement. It integrates an AI large model voice module, depth camera, 200W high-definition camera gimbal and TOF LiDAR, and can realize applications such as multi-robot synchronous motion control, SLAM mapping and navigation, AI visual interaction and voice interaction. Combining cutting-edge AI large model technology, the ROSMASTER M1 can integrate visual, voice, and text information, possessing capabilities in environmental perception, task planning, and dynamic execution. It innovatively adopts a dual-model architecture, with a decision model responsible for task understanding and planning, and an execution model focusing on action generation and response, effectively overcoming the logical confusion problem of traditional single-model systems. It also supports dialogue interruption, dynamic feedback reasoning, and can be extended with a RAG knowledge base, significantly improving semantic understanding and intent recognition capabilities, meeting diverse teaching and research needs.



AI Multimodal Large Model

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Innovative Introduction of Road Network Planning

By integrating multimodal large models, visual autonomous driving models, and the ROS2 road network planning system, the M1 can achieve advanced intelligent autonomous driving on a sandbox map. It supports autonomous planning of driving paths, precise arrival at the target, and efficient completion of tasks.

3D Depth Vision Recognition [Superior Version]

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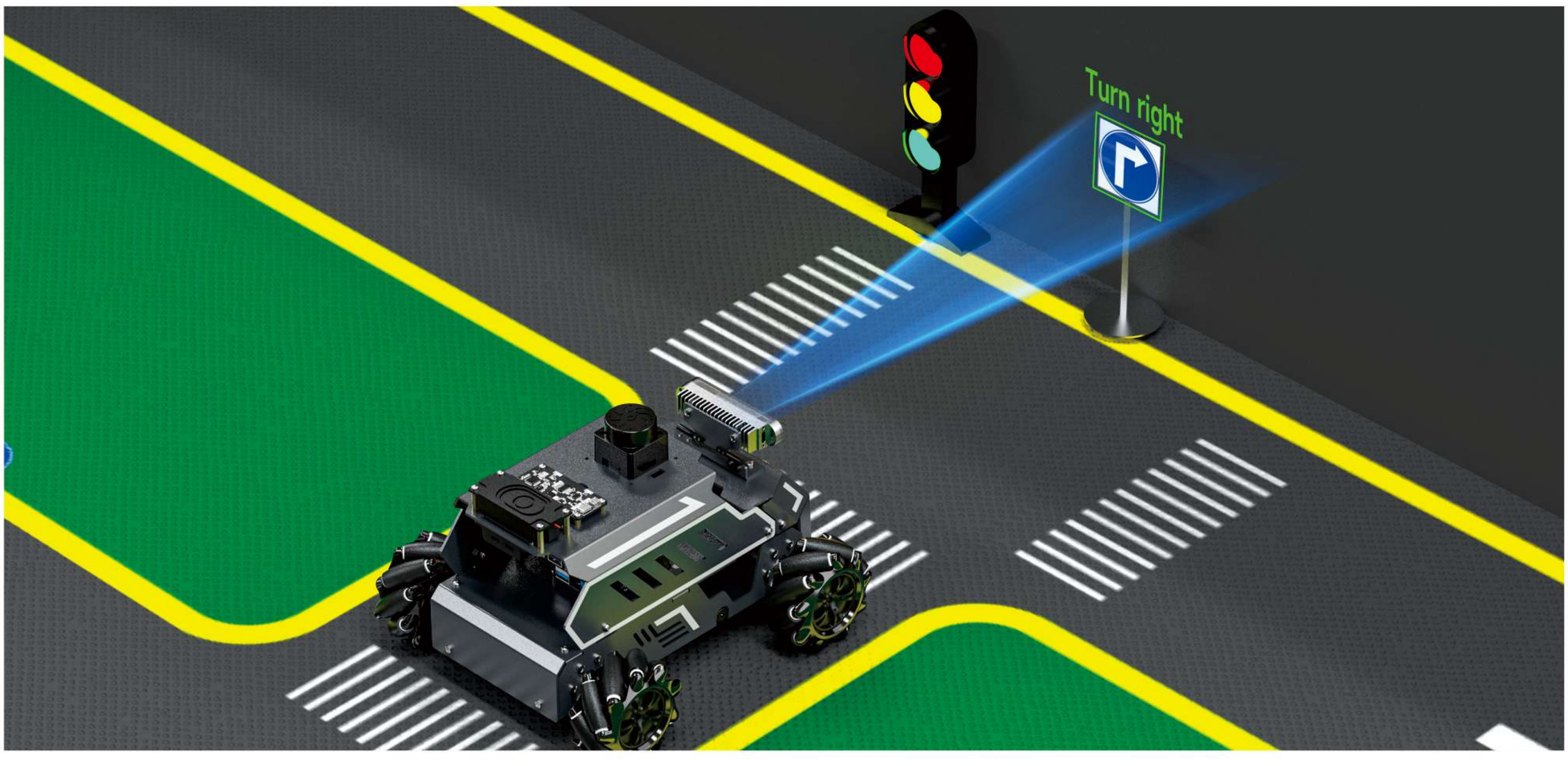
	Jetson Nano B01 (Ubuntu18.04 LTS + Docker + ROS2 Humble)
	Jetson Orin Nano SUPER (Ubuntu22.04 LTS + ROS2 Humble)
Storage	Raspberry Pi 5: 128GB TF card / Jetson Nano B01: 128GB USB flash drive / Jetson Orin Nano SUPER: 256GB SSD
Programming language	Python
Input	Nuwa-HP60C Depth Camera / 200W HD Camera Gimbal / T-mini Plus LiDAR / SLAMTEC CI LiDAR
	AI Large Model Voice Module, USB Wireless Handheld, Nine-Axis IMU Sensor, Motor Speed Encoder
Output	200W HD camera gimbal, Ackermann steering servo, 4 x 520 metal motors, OLED display, buzzer, cavity speaker
Battery life	3 hours (working time varies depending on usage conditions)
Power supply solutions	12.6V 6000mAh battery pack (with protection board)
Power connector	DC 4.0*1.7 power connector
Safety Protection	Six-fold protection: overcharge, overcurrent, overdischarge, short circuit, undervoltage, and overvoltage protection.
Servo motor solution	9G high-quality digital servos ×2
Motor solutions	1:56 high-torque 520 encoder metal motor * 4
Remote control method	PC computer, wireless controller, mapping and navigation app (iOS/Android)
Communication methods	WiFi network (local area network/access point)
Vehicle body material	Carbon oxide sand aluminum alloy
Dimension	Standard/Superior Version: 284.4×231.4×181.4mm
Weight	2.68-2.74 kg (Weight may vary depending on the selected configuration)



AI Wheeled Robotic Car

microROS



microROS Robot [Virtual Machine Version]

MicroROS Robot is different from traditional ROS cars. It creatively separates the computing platform from the chassis in traditional cars, migrates complex computing tasks to the PC virtual machine environment, and the key sensor data related to the chassis is wirelessly transmitted to the virtual machine system by the coprocessor through MicroROS. MicroROS Robot can not only be used to learn the ROS2 robot operating system, but we also provide a comprehensive low-level hardware driver tutorial to help developers master R052 robot development.



microROS-Pi5 [Raspberry Pi version]

MicroROS-Pi5 is a ROS2 intelligent robot developed based on Raspberry Pi 5, equipped with a 2-DOF camera platform and TOF high-performance laser lidar, built-in OpenCv image processing and MediaPipe machine learning algorithms, which can realize robot motion control, AI visual interaction, SLAM mapping navigation, multi-machine synchronous control and other functions.

Developed using ROS2 system

The humble version with strong stability, rich data and long-term support is adopted. There is no need to worry about incompatibility of robot hardware, and it provides exclusive functions adapted to ROS2.

Equipped with high-frame rate camera

Equipped with high-quality digital servos, high-definition high-frame rate cameras, and aluminum alloy supports, it supports two-degree-of-freedom motion tracking in the horizontal and vertical directions, and conducts in-depth development of AI vision.

Support Rviz simulation

Rviz simulation environment supports visualization of the robot's lidar and odometer data, camera image processing, map construction and path planning during the SLAM process, providing intuitive face-to-face feedback to help users understand the system status and operation process

Onboard ESP32 coprocessor

ESP32 coprocessor has built-in Wi-Fi and Bluetooth functions, supports MicroROS, can process multiple sensor data such as motors, servos, odometers, lidars, etc., and transmits sensor data to the virtual machine in real time, realizing efficient communication between the chassis and the virtual machine.

AI vision/AI interactive gameplay

QR code recognition/3D object recognition
MediaPipe posture detection
MediaPipe face detection
Color/face/KCF object tracking
Line patrol autonomous driving
Gesture recognition to control movement

Lidar function play

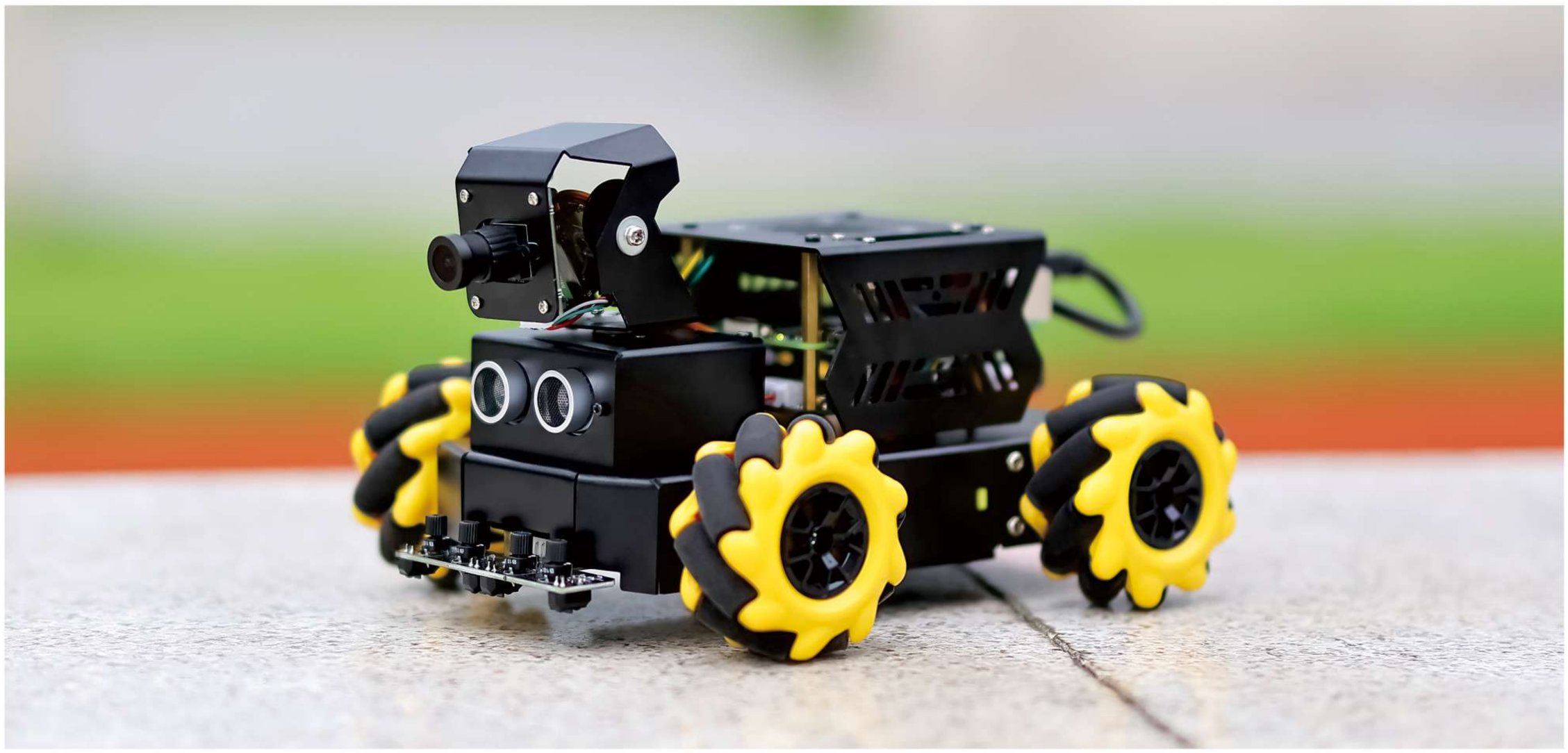
Lidar mapping
Path planning and navigation obstacle avoidance
iOS/Android APP mapping navigation
iOS/Android APP remote control
lidar obstacle avoidance/lidar tracking
lidar guard/lidar patrol

Controller	Virtual Machin	Raspberry Pi 5
System version	Ubuntu 22.04	Raspberry Pi OS
ROS2 operating system version	Humble	
Proxy connection method	WiFi-UDP	Supports WiFi-UDP and serial port mode, serial port mode is used by default
Programming language	Python, C language	
Input	Buzzer, 310 motor interface*4, 2-DOF servo platforml (advanced version only)	Six-axis IMU, MS200 laser lidar, motor speed code disk, custom GPI02. Custom buttons, ROS-WiFi image transmission module (advanced version only)
Output	Six-axis IMU, MS200 laser lidar, motor speed code disk, custom GPIO*2, custom buttons, camera	Buzzer, 310 motor interface*4, servo platform
Servo solution	YB-SG90 9G digital servo	
Camera solution	ROS-WiFi image transmission module (advanced version only)	2MP-120° high frame rate camera
Motor solution	310 metal motor with speed code dis*4	
Motor speed	450+10rpm	
Motor torque	4kg'cm	
Wheel type	Rubber tire (size 48*21.5mm)	
Power solution	7.4V 2000mAh 2S lithium battery	
Battery life	SLAM Standard Edition: About 5 hours / AI Vision Advanced Edition: About 3 hours	2 hours
Power interface	Type power supply interface, DC4.0~1.7 charging interface	
Communication method	LAN WiFi network	
Safety protection	Short circuit protection, overcurrent protection	
Body material	Anodized aluminum alloy	
Body size	198.60*153.00*124.18mm	237.96*153*124.18mm
Assembled weight	About 905.5g (weight varies slightly depending on the version)	1089.5g (manual measurement data, please refer to the actual product)



» AI Wheeled Robotic Car

RASPBOT V2



RASPBOT V2 is an AI Large model vision robot designed for beginners. It uses a Raspberry Pi 5 as its main controller and is equipped with Mecanum wheels, a camera gimbal, and an AI Large model voice module supporting omnidirectional movement, AI visual interaction, and voice interaction. It features multiple sensors, supporting basic sensor application learning and practice. Combining cutting-edge AI Large model technology, RASPBOT V2 can integrate visual, voice, and text information, possessing environmental perception, task planning, and dynamic execution capabilities. It provides 160 learning lessons and case studies to help you easily master robotics technology and AI large model applications, enjoying the infinite possibilities of the AI world.

AI Multimodal Large Model

Supports real-time access to the Tongyi Qianwen large model platform, and can call upon large models such as Tongyi Qianwen, DeepSeek, Baichuan Intelligence, and Lingyi Wanwu. It integrates text + multimodal large model technology, adopts a dual-model inference architecture and dynamic feedback inference mechanism, and is like a robot's super brain. It has the ability to engage in free dialogue and understand the environment, can autonomously execute open commands, personalize the RAG knowledge base, and infer user intent.

AI visual recognition

RASPBOT-V2 adopts Raspberry Pi as the main control and Python as the main programming language. With the OpenCV image processing library and MediaPipe machine learning framework, it can realize color recognition, license plate recognition, human posture estimation, QR code recognition, gesture recognition, garbage recognition and other functions.

Support APP remote control HD image transmission

APP real-life human perspective controls the car's driving, and the video screen is transmitted back in real time.

AI visual interaction

RASPBOT-V2 combines a 2DOF camera gimbal to realize AI visual interaction, such as color/face/tag code tracking, following, gesture control, QR code control and other functions.

Mecanum wheel omnidirectional movement

Omnidirectional Mecanum wheels help RASPBOT-V2 move 360° in all directions, easily challenge complex routes, and run rampant in all directions.

Based on Raspberry Pi 5 main control

AI performance has been greatly improved, the camera picture is smoother, and the performance is 2~3 times that of Raspberry Pi 4B.

Main controller	Raspberry Pi 5
System	Raspberry Pi OS
ROS version	Raspberry Pi OS+ROS2 Humble
Body material	Metal
Input	Ultrasonic sensor, four-channel line-following sensor, button, infrared receiver, camera, AI large-scale model voice module
Output	OLED display, motor, RGB LED strip, buzzer, servo motor, cavity speaker
Camera solution	100W pixel USB camera
Camera resolution	480p/720p resolution
Camera field of view	Diagonal field of view 120°, horizontal field of view 110°
2D PTZ servo	YB-SG90 Digital Servo
Servo operating voltage	4.8V~6.0V DC
Servo pulse width range	500~2500us corresponds to 0~180°
Motor solution	TT geared motor
Motor torque	0.8N·m
Motor speed	245±10%rpm
Camera PTZ	2 degrees of freedom (range of motion: 180° horizontally, 110° vertically)
Power supply	7.4V 2S lithium battery pack (2000mAh)
Working time	Approximately 2.1 hours (continuous working)
Remote control method	PC, infrared remote control, mapping and navigation app (iOS/Android)
Dimensions(Assembled)	208.74*165.83*127.05mm
Weight(Assembled)	Standard version: 885g
	Superior version: 917.4g



RDK ROBOT Car

The RDK ROBOT car, which is an excellent platform for learning ROS2 SLAM mapping navigation, A machine vision, and deep learning.



- Using RDK X3/X5 development board
- ROS2 system development
- Deep camera visual recognition
- Lidar SLAM mapping navigation
- Mecanum wheel omnidirectional movement

CPU	RDK X3	RDK X5
CPU	ARM® Cortex®-A53， 4xCore, 1.5GHz	ARM® Cortex®-A55， 8xCore, 1.5GHz
Equivalent computing power	5Tops	10Tops
Operating system	Ubuntu20.04+ROS2-Foxy	Ubuntu22.04+ROS2-humble
Memory	4GB	8GB
Input	MS200 low-light lidar, CSI camera, wireless hand bridge, depth camera(optional)	
Output	Motor, OLED, buzzer system	
Power supply	DC7.4V	
Battery life	3.5H	
Remote control method	Hand bridge control, tray control, APP control	
Communication method	WiFi network (LAN/AP)	
Body material	Aluminum alloy	
Safety protection	Reverse connection protection, short circuit protection, stall protection	
Product size	236.11*181.10*184.9mm	
Assembled weight	Weight 1.93kg	

AI Wheeled Robotic Car

TRANSBOT SE

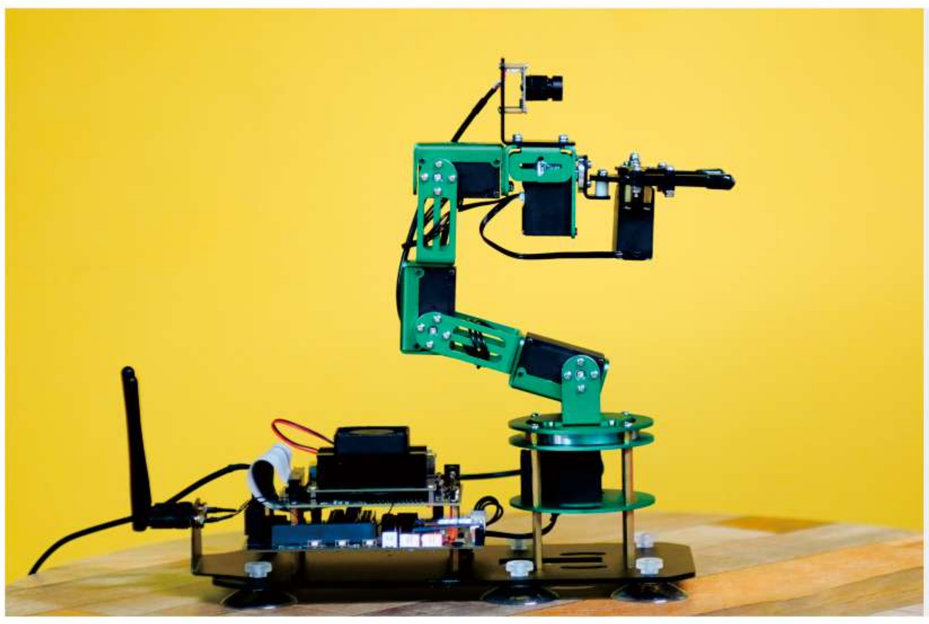
Transbot-SE is a tracked intelligent robot developed based on the ROS robot operating system. It is equipped with a three-degree-of-freedom robotic arm and a two-degree-of-freedom camera platform, which can realize robot motion control, robotic arm handling, remote control communication, intelligent AI recognition, tracking, automatic driving, robotic arm simulation control and other functions.



- Three-degree-of-freedom robotic arm
- ROS system development
- AI visual gameplay
- Robotic arm simulation control
- Gesture control
- FPV real-time remote control

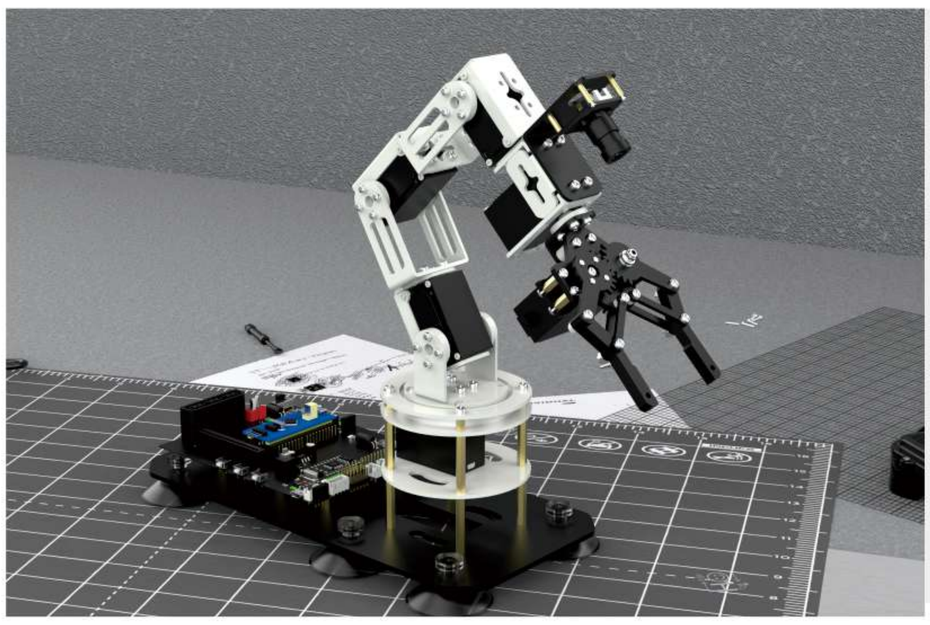
Controller	Raspberry Pi 5	Jetson Nano 4GB
Microprocessor	Broadcom BCM2712 64-bit 2.4GHz quad-cor CortexA76+VideoCore Vl@800 MHz	64-bit quad-core ARM A57 1.43GHZ+128 -core NVIDIA Maxwell @921MHz GPU
AI computing power	About 0.5 TFLOPS (Fp16)	0.5 TFLOPS (Fp16)
Operating system	raspios-bookworm-arm64 + ROS_Noetic	Ubuntu 18.04 LTS +ROS Melodic
Programming language	Python/C language	
Input	HD camera, PS2 wireless controller, six-axis attitude sensor, motor speed code disk	
Output	Buzzer, 520 motor interface*2, bus servo interface, servo gimbal, OLED display	
Platform servo solution	Metal 9G servo	
Power solution	12.6V 4400mah 2C lithium battery pack	
Battery life	>2 hours	
Power interface	T-type power supply interface, DC4.0*1.7 charging interface	
Remote control method	Mobile APP, PC, PS2 wireless controller	
Communication method	WiFi network (LAN/AP)	
Body material	Anodized powder-coated aluminum alloy (white)	
Safety protection	Overcharge and over-discharge protection, short circuit and overcurrent protection	
Assembled weight	2.1kg (weight may vary depending on configuration))	

DOFBOT



DOFBOT AI visual robot

The DOFBOT six-degree-of-freedom robotic arm adopts an integrated design of camera and body. The "hand-eye integration" visual recognition makes the robotic arm more agile; it can not only realize color recognition tracking and grasping, but also realize human-computer voice interaction and even train garbage classification models.



DOFBOT SE AI Visual Robot

DOFBOT-SE is an educational entry-level product for the Movet robotic arm developed based on a virtual machine system. The virtual machine generates control decisions, and the STM32 controller drives the robotic arm. The integrated design of the camera and the robotic arm body can achieve color recognition, tracking and grasping, as well as model training, garbage sorting.

Model training Garbage sorting

The DOFBOT kit comes standard with multiple wooden blocks with garbage patterns. By loading the garbage classification model, the type of garbage on the wooden blocks can be identified, and the robotic arm will "sort the garbage" into the corresponding classification area on the map.

Mobile tracking Visual recognition

Supports color recognition tracking, color grabbing, color interaction, human feature recognition and other functions.

ROS robot operating system

The ROS robot control system simplifies the complex motion control of the 6-DOF serial bus machine, helping users to easily control the DOFBOTAI visual robotic arm.

6-DOF robotic arm

Equipped with six intelligent serial bus servos, making the robot more flexible

Artificial Intelligence Hand-Eye Integration

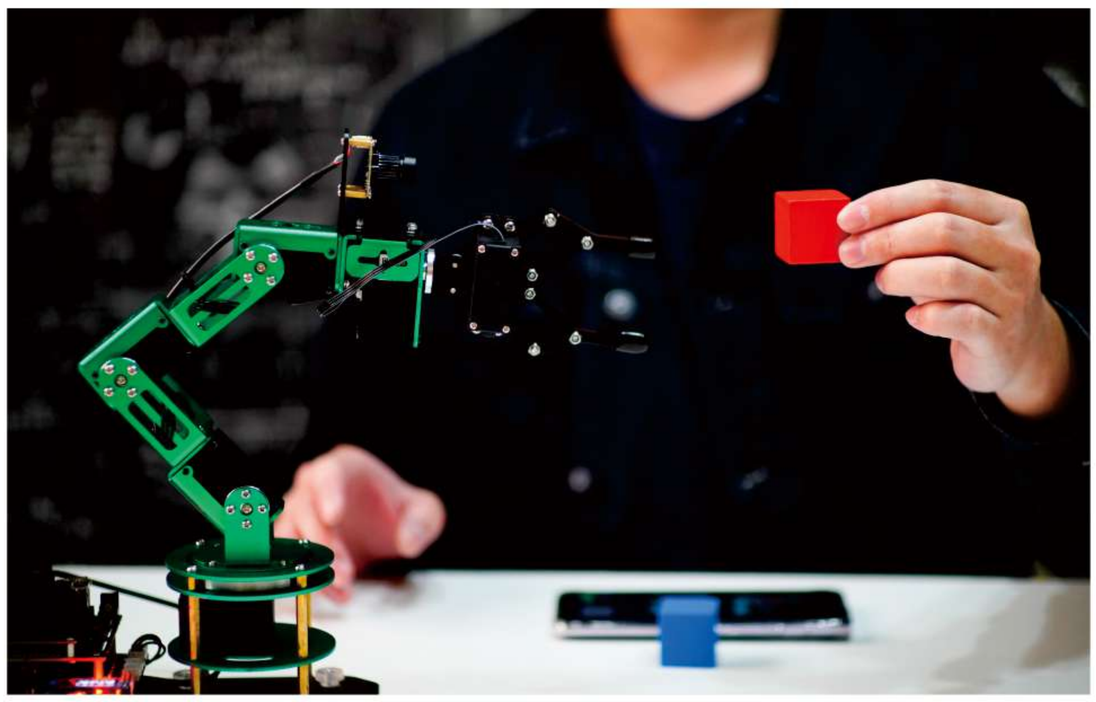
Control the RoboCop from a first-person perspective, making visual recognition more flexible.

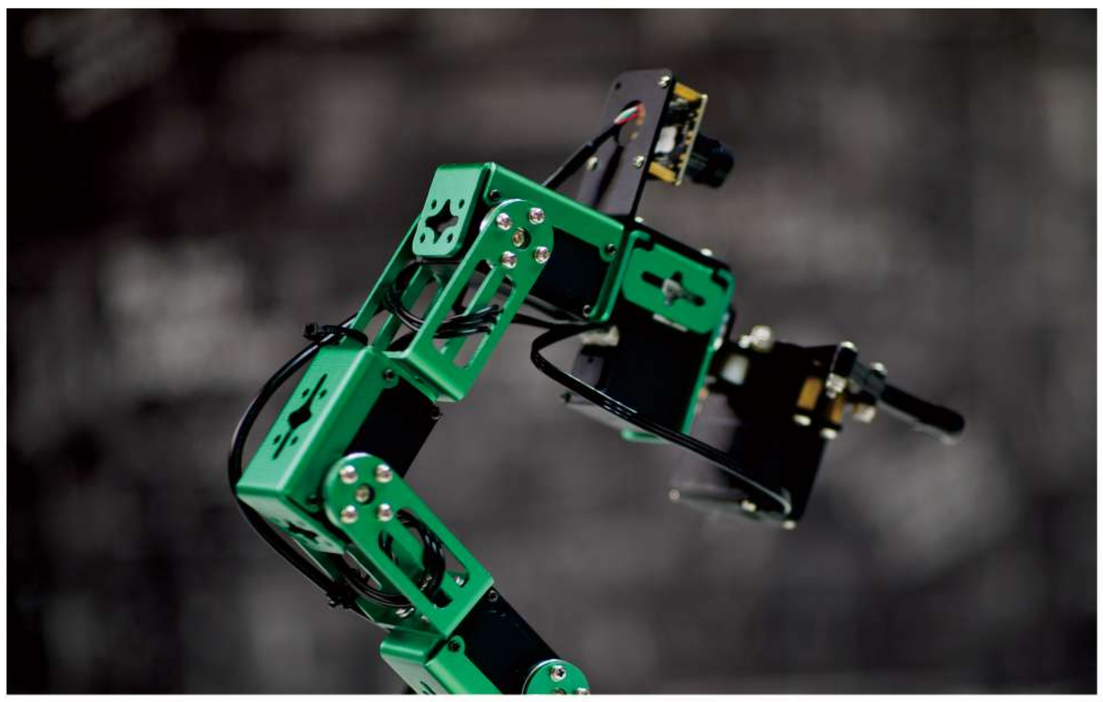
Robot arm motion control

Customized learning action group
Interesting fixed action group
Robot arm synchronous teaching
Inverse kinematics control
MoveIt simulation control

Rich hardware configuration

Intelligent serial bus servo
Robotic arm dedicated map
JETSON NANO B01/Raspberry Pi 5 controller/virtual machine

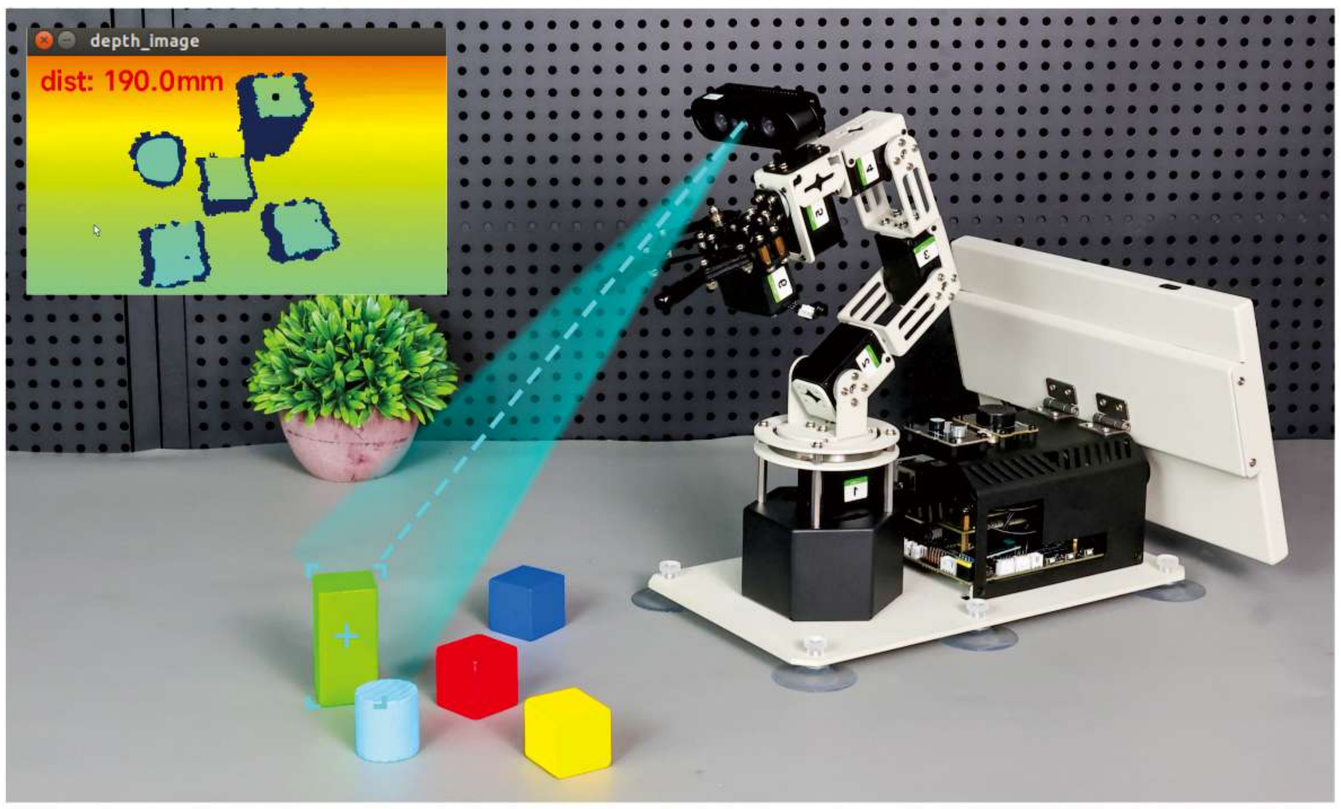




ROS controller	PC virtual machine	Raspberry Pi 5	Jetson Nano B01
Microprocessor	/	Broadcom BCM2712 64-bit 2.4GHz quad-core CortexA76+VideoCore VII@800 MHz	Quad-core ARM A57+128-core NVIDIA Maxwell
AI computing power	/	500GFLOPs	472GFLOPs
Operating system	Ubuntu mate 20.04 LTS+ ROS_Noetic	raspios-bookworm-arm64 + ROS_Noetic	Ubuntu 18.04 LTS+ ROS_Melodic
Programming language	Python		
Servo solution	15kg*5+6kg*1 serial bus intelligent servo		
Input	Wide-angle camera, K1 button, K2 button, reset button, 2*IC interface, 5V fan interface		
Output	RGB indicator light, OLED display, buzzer, 6-way bus servo interface, 6-way PWM servo interface		
Power solution	12V5A power adapter		
Power interface	T-plug interface		
Remote control method	Mobile APP, PC host computer, 2.4G wireless controller	Mobile APP, PC host computer, PS2 controller (PC side)	
Communication method	WiFi Network		
Safety protection	Overcurrent protection, reverse connection protection		
Arm material	Anodized aluminum		
Assembled size	272*135*473mm	303*135*473mm	
Assembled weight	1256g		
Robot degree of freedom (DOF)	5 degrees of freedom + gripper		
Effective load	200g (weight when stretched)		
Load	500g (weight when clamped)		
Arm span	350mm		
Maximum opening and closing distance of the gripper	6cm		
Effective grasping range	The area with radius ≤ 30cm and the central axis as the half of the image		
Repeat positioning accuracy	±0.5mm		
Power supply voltage	100~240V 50/60Hz		
Camera	300,000 pixels 110-degree wide-angle camera		
Resolution	480p（640*480）		
Frame rate	30fps		
Focus mode	Manually adjustable focus		

DOFBOT-PRO

DOFBOT-PRO combines 3D vision technology with robotic arm control, which can not only achieve depth distance measurement, shape recognition, height measurement, and volume measurement, but also can identify, track, and grab target objects in 3D space through the robotic arm. The Machine Learning Model Training is operating through the GPU of the Jetson motherboard. DOFBOT-PRO can realize a variety of image recognition tasks such as garbage/color/object/face recognition. Through Python programming, it can also expand various AI creative projects such as voice interaction. By integrating the ROS system and Forward/Inverse Kinematics Algorithms, the complex motion control of the 6-DOF robotic arm is simplified.



- 3D deep point cloud recognition
- 3D space stereoscopic capture
- AI visual recognition interaction
- ROS operating system
- Intelligent voice recognition interaction

ROS controller	Jetson Nano B01 4GB	Jetson Orin Nano SUPER 4/8GB	Jetson Orin NX SUPER 8/16GB
Operating system	Ubuntu18.04 + ROS1 Melodic	Ubuntu22.04 + ROS2 Humble	
Programming language	Python		
Servo solution	15kg*5+6kg serial bus servo		
degrees of freedom(DOF)	6		
Input	Camera, K1 key, K2 key, reset button, IIC interface*2, 5V fan interface, intelligent recognition module		
Output	RGB indicator light, OLED display, buzzer, 6-channel bus servo interface, 6-channel PWM servo interface, voice broadcast module		
Remote control method	Mobile APP, USB controller, PC web page control		
Communicate method	WiFi network		
Effective load	110g(weight when stretched)		
Load	410g(weight when clamped)		
Arm span	350mm		
Effective crawling range	Area with a radius ≤30cm and the central axis as a semicircle		
Maximum open distance of clamp	6cm		
Repeat positioning accuracy	±0.5mm		
Camera	Astra DABAI DW2 depth camera		
Camera working distance and accuracy	0.15-5m ； <1%@1m； <1.3%@2m		
Power solution	12V5A power adapter (DC4.0*1.7)		
Weight	3780g		
Dimension	348.6*242.4*491.1mm		

JETCOBOT

JetCobot is a 7-axis visual collaborative robotic arm. It uses the NVIDIA series development board as the main control board. It adopts a configuration similar to the UR robot, flexible movement, and maximum effective arm span of 270MM. Through the ROS robot operating system and inverse kinematics algorithm, the robotic arm coordinate control, motion planning, gripping and sorting functions are realized. It equipped it with a 0.3MP USB camera, combined with OpenCV images, machine vision, deep learning and other algorithms, can complete color interaction, face tracking, label recognition, model training, gesture interaction and other functions. In addition to supporting MoveIt simulation control, JetCobot also supports APP, handle, PC web control.



Similar to UR robot configuration

JetCobot adopts a UR robot configuration, with a smooth body, both rigid and flexible, and beautiful curves. Compared with other types of robotic arms, it has a larger range of motion and can reach more points.

Hand, eye, and arm 3-in-1

Hand, eye, and arm three-in-one, no external camera or complex calibration required, can achieve millimeter-level precision positioning and operation

AI visual recognition interaction

① Color recognition and tracking ② Color block sorting ③ Color block grabbing @ Color interaction ⑤ Face recognition and tracking ⑥ Label recognition Intelligent palletizing

Deep learning Model training

JetCobot's kit is equipped with garbage pattern blocks. By loading the corresponding model, JetCobot can quickly identify different "garbage" and place it in the corresponding classification area.

Inverse kinematics algorithm

JetCobot has a built-in perfect inverse kinematics algorithm. You only need to enter the specified coordinates to accurately drive the robot arm to automatically reach the specified position, and it supports setting the gripper direction.

7-axis Collaborative Robotic Arm

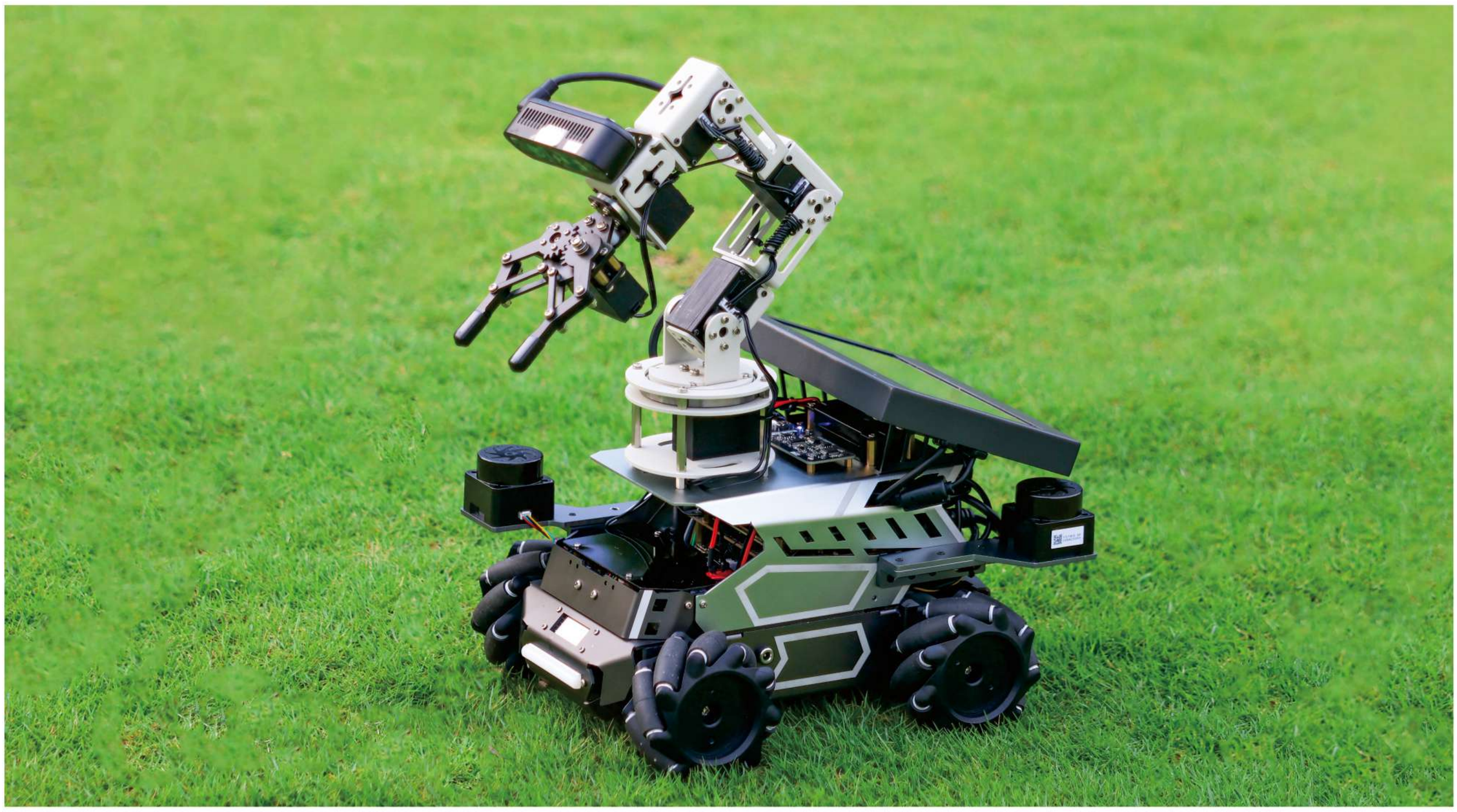
JetCobot is a 7-axis collaborative robot developed by commercial users. It is small but powerful, easy to operate, and can work safely with people

ROS control board	Jetson Nano B01 4GB (Ubuntu18.04 + ROS1 Melodic)
	Jetson Orin Nano SUPER 4GB/8GB (Ubuntu22.04+ ROS2 Humble)
	Jetson Orin NX SUPER 8GB/16GB (Ubuntu22.04+ ROS2 Humble)
Programming languag	Python
Robotic arm degrees of freedom	7
Payload	233g
Working radius	270mm (without clamping jaws) 374.5mm (with mold opening clamping jaws)
Weight	943g
Power Supply	DC12V5A power adapter
Power plug type	DC 5.5mm×2.1
Working temperature	-5~45°C
Communication mode	serial communication
Material	Plastic
Gripping jaws opening and closing range	15.5-50.5mm
Repeat positioning accuracy	±0.5mm
Joint rotation angle	-153° ~ +153°
Focusing method	Fixed focal length
Camera pixel 30W	30W
Camera cable length	70cm
Shooting angle	110° wide angle
Resolution	480P (640*480)
Frame rate	30fps



ROSMASTER M3 PRO

ROSMASTER M3 Pro is an AI large handling robot developed by Yahboom for ROS educational scenarios. It includes a Mecanum wheel chassis, A1 large-model voice module, 6-DOF robotic arm, 3D depth camera, and dual TOF LiDAR, enabling motion control, 3D recognition, and grasping. Combined with the A1 large-model, it can integrate multiple information and possess environmental perception capabilities. Its innovative dual-model reasoning architecture solves problems inherent in traditional models and also supports dialogue interruption, dynamic feedback, and customizable RAG knowledge base expansion to meet teaching and research needs.



Embedded AI Multimodal Large Model

The ROSMASTER M3 Pro deploys a multimodal AI large model, which can access platforms such as Tongyi Qianwen in real time. It integrates text and multimodal technologies, uses a dual-model inference architecture and dynamic feedback mechanism, and has the ability to engage in dialogue and understand the environment. It can autonomously execute commands, customize the RAG knowledge base, and infer user intent.

Dual-model dynamic feedback reasoning

A large text model parses instructions and plans tasks, while a large visual multimodal model generates action lists and responses. The dynamic feedback reasoning mechanism adapts to changes in action results, robot state, and environment in real time at the execution layer, dynamically adjusting decisions to ensure efficient task completion and improve execution success rate.

3D Depth Hand-Eye Integration

Equipped with a 6-DOF robotic arm and a high-performance binocular structured light depth camera at the end, it can calculate the distance to objects in three-dimensional space based on 3D depth information, enabling more accurate target recognition, tracking, and grasping.

Intent Inference and Free Execution

By expanding the RAG knowledge base, user intent recognition and environmental context analysis are achieved. Without issuing detailed instructions, the robot can understand the user's potential needs and autonomously plan tasks and respond dynamically.

Dual-Lidar Omnidirectional SLAM

The dual Lidars are diagonally staggered, enabling 360° perception (right front scan path, left rear dynamic compensation), adapting to frequent turns. Through temporal alignment, point cloud registration, and IMU fusion, high-speed distortion is reduced, improving mapping and navigation accuracy.

Supports free-flowing conversation interruption

After being woken up, recording can be interrupted and re-recorded immediately. The process can be stopped and commands reissued at any time during conversation or action execution, greatly improving the flexibility of interaction and ease of use.



High-end hardware configuration:

① JETSON/Raspberry Pi controller boards

② 9600mAh high-capacity battery pack

③ 3rd generation ROS control board

④ AI large model voice module

⑤ Pendulous suspension Mecanum chassis

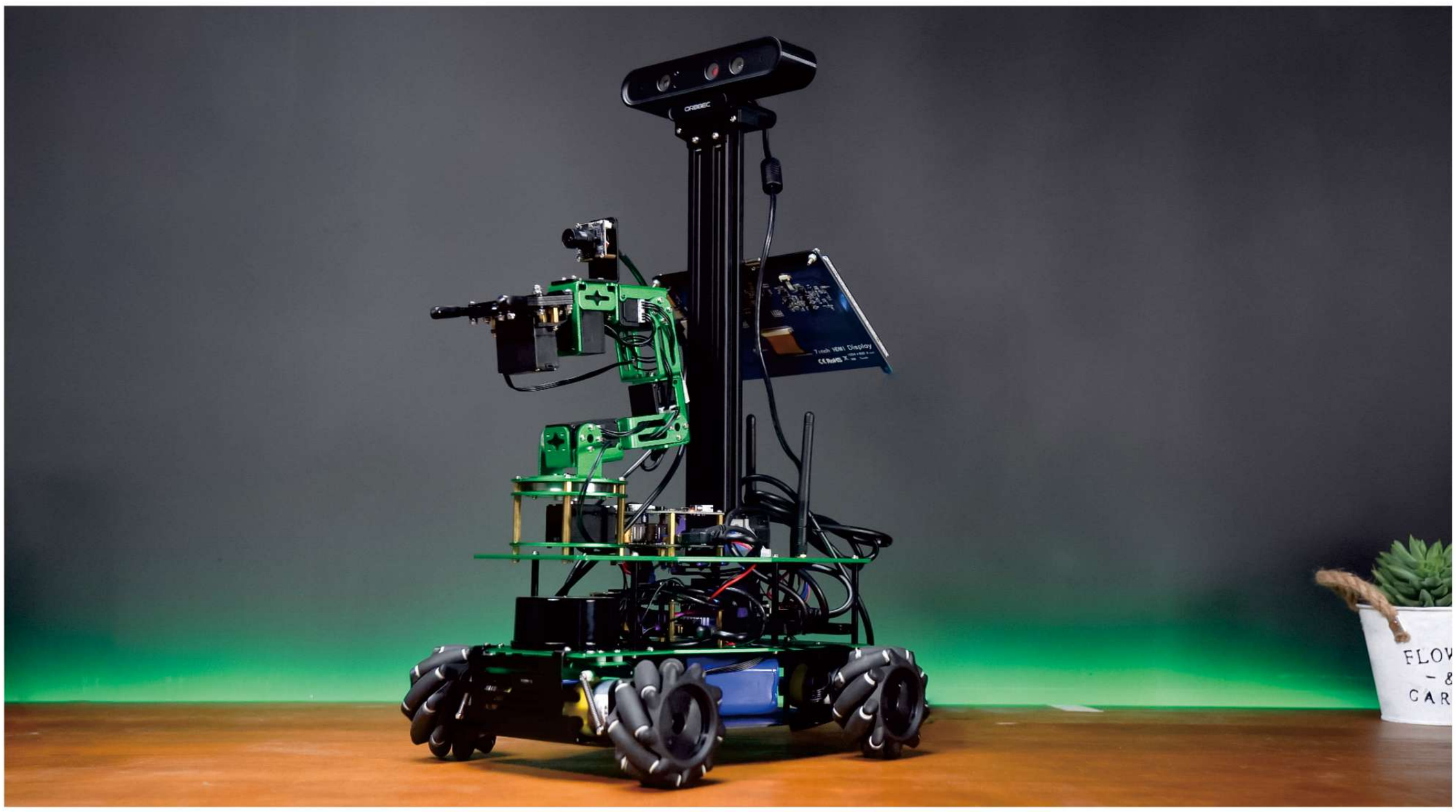
⑥ 7-inch IPS high-definition touchscreen

⑦ All-aluminum alloy body

Main controller	Raspberry Pi 5 (Raspberry Pi OS + Docker + ROS2 Humble)
	Jetson Nano B01 (Ubuntu18.04 LTS + Docker + ROS2 Humble)
	Jetson Orin Nano SUPER (Ubuntu22.04 LTS + ROS2 Humble)
	Jetson Orin NX SUPER (Ubuntu22.04 LTS + ROS2 Humble)
Programming language	Python
Input	DABAI DCW2 depth camera, T-mini Plus LiDAR*2, USB wireless handle, 9-axis MU sensor, motor speed encoder
Output	6-DOF robotic arm, OLED display, RGB LED strip, 4 x 520W metal motors, buzzer, 7-inch display screen
Working time	6.4h (Working time varies depending on conditions)
Power Solution	12.6V 9600mAh battery pack
Power interface	DC 4.0*1.7 power supply interface
Security Protection	Short circuit protection, overcurrent protection, reverse connection protection
Motor solution	520 metal motors with speed measurement code *4
Remote control method	PC, wireless handle, mapping and navigation app (iOS/Android)
Communication methods	WiFi network (LAN/AP)
Body material	Carbon oxide sand aluminum alloy
Dimension	212.4x276.97x571.57mm
Weight	With display:3329.7g (excluding packaging) With display: 4120g (excluding packaging)

ROSMASTER X3 PLUS

ROSMASTER X3 PLUS is a Mailun omnidirectional mobile robot developed based on the robot operating system. It supports Jetson series motherboards and Raspberry Pi 5 as the main control, and is equipped with high-performance hardware configurations such as laser lidar, depth camera, 6 DOF robotic arm, etc., which can realize map navigation, automatic driving, human feature recognition. MoveIt robotic arm simulation control and other applications.



ROS in-depth development

The X3 PLUS car is developed using the ROS system, and teaches users how to get started with ROS and play with ROS robot applications.

Pendulum suspension structure

The large-size aluminum alloy chassis and pendulum suspension chassis allow the robot to adapt to uneven ground, ensuring that the four wheels touch the ground at the same time, and avoiding wheel slippage that affects the motor encoder recognition.

Robotic arm mobile grasping

The robot arm is composed of 6 serial bus servos, providing movelt simulation courses, combined with voice interaction, it can complete voice control handling, garbage sorting and other gameplay.

Large-size Mecanum wheels

Equipped with 85mm large-size Mecanum wheels, it can achieve 360° omnidirectional movement.

Full-level configuration and top performance

University research/flagship scientific research/mobile grasping/deep learning/ROS advanced.

138 video tutorials

Open source, with 138 live video courses from the simplest to the most advanced, to help users learn easily.

Flagship hardware configuration

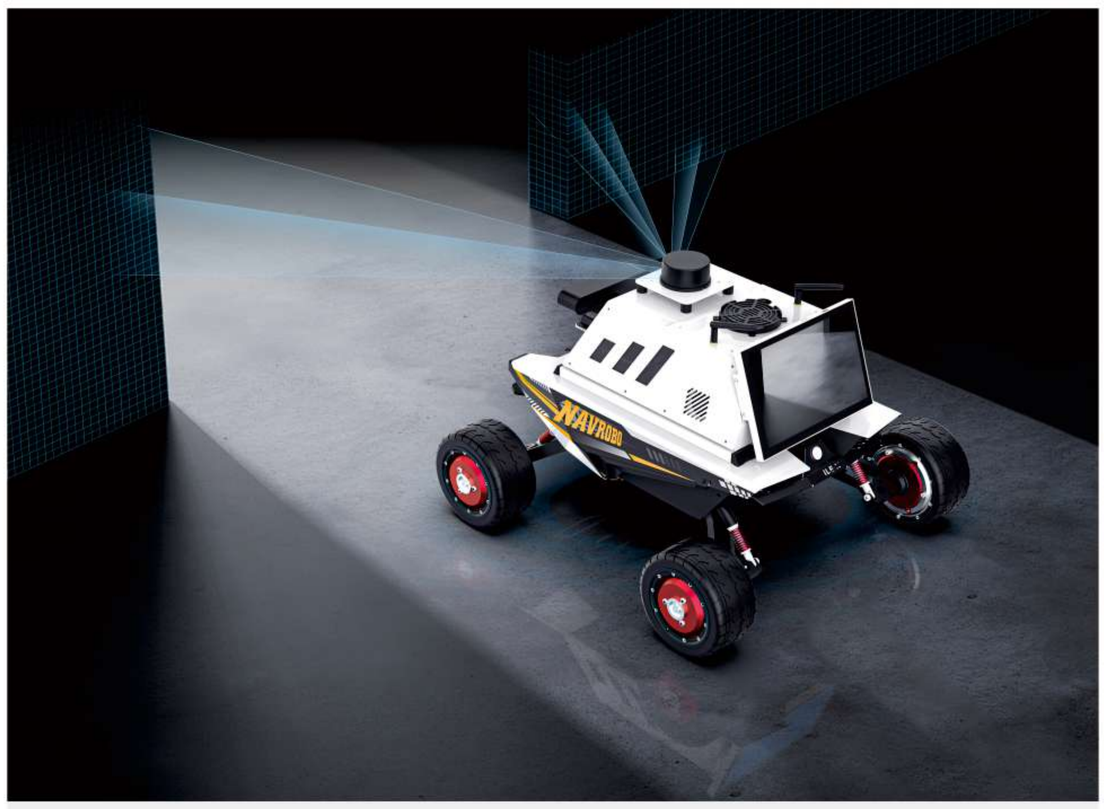
① Pendulum suspension structure
② 85mm large-size Mecanum wheels
③ Thousand-yuan-level TOF high-performance laser lidar
④ Astra Pro Plus depth camera
⑤ Voice interaction module
⑥ 6-DOF AI visual robotic arm
⑦ On-board ROS 7-inch touch screen
⑧ Strong endurance 9600mah battery pack
⑨ Through-type headlights



Main control board	Raspberry Pi 5 8GB	Jetson Nano 4GB	Jetson Orin Nano SUPER 4GB	Jetson Orin Nano SUPER 8GB	Jetson Orin NX SUPER 8GB	Jetson Orin NX SUPER 16GB
Microprocessor	Broadcom BCM2712 64-bit 2.4GHz Quad-Core Cortex A76 + VideoCore VII @ 800 MHz	64-bit quad-core ARM A57 @ 1.43 GHz + 128-core NVIDIA Maxwell @ 921MHz GPU	6-core Arm? Cortex?-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3		6-core NVIDIA Arm? Cortex A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3	8-core NVIDIA Arm? Cortex A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
AI computing power	About 0.5 TFLOPS (FP16)	0.5TFLOPS (FP16)	34 TOPS	677 TOPS	117 TOPS	157 TOPS
Operating system	Raspberry Pi OS + Docker + ROS Melodic	Ubuntu 18.04 LTS + ROS Melodic	Ubuntu22.04 LTS + Docker + ROS Noetic		Ubuntu22.04 LTS + Docker + ROS Noetic	
Programming language	Python					
Input	Orbbec Astra Pro Plus Depth Camera, YDLIDAR 4ROS LiDAR, PS2 Wireless Controller, 9-Axis Attitude Sensor, Motor Tachometer, USB Camera					
Output	RGB taillights, buzzer, 4 x 520 motor interfaces, 6-DOF robotic arm, 4 x PWM servo interfaces, OLED display.					
Motor solution	520 metal motors with speed measuring encoders × 4					
Power supply solution	12.6V 9600mAh 2C Lithium Battery Pack					
Working time	3 hours	3.5 hours	3 hours		2.5 hours	
Power interface	T-type power supply interface, DC 4.0×1.7 charging interface					
Remote control method	Mobile app (iOS/Android), PC, PS2 wireless controller					
Communication methods	WiFi network (LAN/AP)					
Security Protection	Short circuit protection, overcurrent protection					
Body material	Anodized aluminum alloy					
Assembled weight	About 4.35kg					

NAVROBO

NAVROBO is an indoor and outdoor composite robot suitable for laboratory training, robot competition, logistics transportation, agricultural harvesting and other usage scenarios. It uses the Jetson series motherboard as the main control, and can be equipped with single-line TOF LiDAR and 16-line LiDAR, monocular/binocular structured light depth camera, 7-axis robotic arm and other configurations. It can realize indoor and outdoor mapping navigation, visual tracking and grasping and other functions. Combined with development materials and teaching documents, the robot can be redeveloped to meet the application needs of various scenarios.



NAVROBO navigation robot



NAVROBO collaborative robot

ROS deep development

NAVROBO is developed using the ROS system, continuing the ROSMASTER tutorial to learn professional collaborative ROS robot applications.

Four-wheel drive independent suspension structure

The large-size four-wheel drive chassis and independent suspension allow the robot to adapt to complex environments and have strong passability and ground adaptability.

Single-line/multi-line TOF laser lidar

Using medium- and long-range single-line/long-range multi-line TOF laser lidar, it quickly scans and builds two-dimensional/three-dimensional maps for different scenes.

Preferred configuration flagship performance

University research/scientific research/collaborative grasping/deep learning/ROS development

Hub motor + road tire

The design of combining filled solid tires and hub motors eliminates the complex transmission structure design and can move flexibly on different ground surfaces.

Binocular structured light depth camera

Binocular structured light depth camera can be used in indoor and outdoor scenes, can cope with the influence of outdoor ambient light, and is specially designed for applications such as robot navigation and visual recognition.

7-axis collaborative robotic arm [collaborative version only]

It equipped with DABAI DCW2 depth camera which can easily complete visual tracking and spatial grasping of objects. A Movet simulation function tutorial is provided.

	NAVROBO [Indoor version]	NAVROBO [Outdoor version]	NAVROBO [Collaborative version]
Master	Jetson Orin Nano（8GB）	Jetson Orin NX （16GB）	
AI Computing Power	40 TOPS（INT8）	100 TOPS（INT8）	
Processor	6-core Arm?Cortex?-A78AE v8.2 64-bit CPU 1.5MB L2+4MB L3 1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores	8核NVIDIA Arm? Cortex A78AE v8.2 64位 CPU 2MB L2 + 4MB L3 1024核NVIDIA Ampere GPU with 32 Tensor Cores	
Operating System	Ubuntu20.04 + ROS + noetic		
Programming language	Python3 C++		
Input	Astra Pro2 depth camera, YDLIDAR 4ROS LiDAR	Gemini 335 depth camera, VanJee WLR720 LiDAR, Dandelion Router R300A	Gemini 335 depth camera*2, VanJee WLR720 LiDAR, Dandelion Router R300A
	10-axis IMU module, 15000mAh long-life battery pack		
Output	/	Dandelion router R300A	Dandelion Router R300A, myCobot 320 robotic arm
	10.1-inch touch screen, four-wheel drive off-road chassis, speaker, through-type searchlight		
Motor solution	Hub motor; four-wheel differential		
Power interface	Aviation expansion interface		
Remote control	Remote control; command control mode		
Communication mode	WiFi network (LAN/AP)	WiFi network (LAN/AP) + 4G remote communication	
Safety protection	Over-current protection; Charging protection		
Body material	Plastic, sheet metal, cold-rolled plate, acrylic		



DOGZILLA

DOGZILLA is a desktop-level AI bionic robot dog with 12 degrees of freedom (DoF) + embodied intelligence. Equipped with a built-in IMU and joint position sensors, it provides real-time feedback on posture, joint angles, and torque. Powered by Raspberry Pi 5, it supports Python programming and runs on the ROS2 operating system, integrating features such as AI visual interaction, robotic kinematics, and LiDAR-based mapping and navigation. Featuring a newly upgraded AI multimodal large model, it not only supports intelligent voice dialogue and scene understanding but also fuses LiDAR navigation with body movements to enable complex embodied intelligence applications. It is an ideal platform for exploring AI and robotics technology.



ROS lidar mapping

S2 is equipped with high-performance TOF laser lidar, which can build maps in real time through all-round laser scanning, accurately perceive surrounding obstacles, and realize dynamic obstacle avoidance, guard, patrol, follow and other functions.

AI visual recognition

①Mediapipe development
②Tag recognition and tracking
③AR vision
④Face recognition and tracking
⑤Color recognition and tracking
⑥Visual line patrol

12-degree-of-freedo bionic structure

DOGZILLA is equipped with 12 high-performance servos
Aluminum alloy structural parts are fixedly connected as the elbow, shoulder and hip joints on each leg to truly restore the motion posture of quadrupeds.

AI Multimodal Large Model

Equipped with a high-definition camera, an AI large model voice module, and a speaker, combined with the powerful iFlytek Spark large model, it can deeply integrate visual, auditory information, and semantic understanding. It can not only accurately identify objects in the environment but also autonomously plan task paths and flexibly respond to scene changes, truly achieving flexible collaboration between hardware and AI.

Bionic gait movement

Carefully designed 20 action groups, one-click command DOGZILLA to achieve mimicry action, users can also customize more cute action groups.

Human-compute voice interaction

S2 combines with intelligent voice interaction module, which can accurately identify commands and understand what users say, such as voice control of robot dog movements, line patrol, color recognition, tracking, ball search and positioning





	Standard version S1	Professional version S2
Main processor	Raspberry Pi 5	
AI computing power	About 500GFLOPS (FP16)	
Operating system	raspios-bookworm-arm64 + ROS_Noetic	
Programming language	Python	
Input	High frame rate camera, six-axis attitude sensor, USB wireless handle, AI large model voice module	High frame rate camera, six-axis attitude sensor, USB wireless handle, MS200 LiDAR, AI large model voice module
Output	Bus serial port servo (robot dog joint), OLED displa mobile phone APP remote control	Bus serial port servo (robot dog joint), OLED display speake mobile phone APP remote control
Remote control method	USB handle remote control, computer we page remote control, keyboard remote control	USB handle remote control, computer web remote control keyboard remote control, map navigation APP
Communication method	LAN TCP communication, serial communication	
Safety protection	Battery overcharge protection, over discharge protection, low voltage protection	
Number of elbow joints	12 degrees of freedom joint	
Material	Aluminum alloy body silicone calf ABS toe	
Battery life	About 1.5 hours	About 1 hours
Dimensions	246.2*144.6*169.5mm (power on) 249.5*144.8*99.4mm (power off)	246.2*144.6*195.3mm (power on) 249.5*144.8*125.2mm (power off)
Weight	About 870g	About 972g

>> Multi-legged Bionic Robotics

DOGZILLA-LITE

DOGZILLA-Lite is a 15-DOF desktop AI bionic robot dog. It features a robotic arm and gripper on its back for flexible grasping; a built-in Raspberry Pi module supports AI vision functions such as face detection and object recognition; and 2.3KG·CM bus serial servos for its joints, enabling omnidirectional movement, six-dimensional posture control, and multi-gait motion. Combined with a large AI model, it can also engage in intelligent voice dialogue, understand scenes, and coordinate the robotic arm and body to complete complex embodied intelligent applications, making it an ideal platform for exploring AI and robotics technologies.



Supports teaching mode

Supports teaching function, allowing manual control of single-leg movements and recording of joint angles, saving as a file for quick recording and playback of movements.

AI-powered visual interactive experiences

① Air control ② Human skeleton recognition ③ Face tracking ④ Color following ⑤ QR code motion control ⑥ Face mask ⑦ Gesture following/control

AI Multimodal Large Model

Equipped with a 5-megapixel camera, a high-sensitivity MEMS microphone, and a cavity speaker, combined with the iFlytek Xinghuo large model, it deeply integrates visual, auditory, and semantic understanding, enabling it to accurately identify objects, autonomously plan task paths, flexibly respond to scene changes, and achieve hardware and AI synergy.

15 Degrees of Freedom [including robotic arm]

The body is equipped with 12 high-performance servo motors, and aluminum alloy structural components fix the elbow, shoulder, and hip joints of each leg, realistically reproducing the movement posture of a quadruped; the back is equipped with a 3-DOF robotic arm, which, combined with visual recognition, can intelligently identify and accurately grasp and move various items.

Integrated Raspberry Pi CM5 Module

The DOGZILLA-Lite features a built-in AI module (Raspberry Pi CM5 solution) with a 2.0-inch IPS screen, four programmable buttons, a 5-megapixel camera, a digital microphone, and a speaker. It supports image recognition, face detection, and voice interaction, offering excellent visual and voice interaction capabilities.

Built-in bionic motion set

All bionic motions are simulated one-to-one with those of a real puppy.

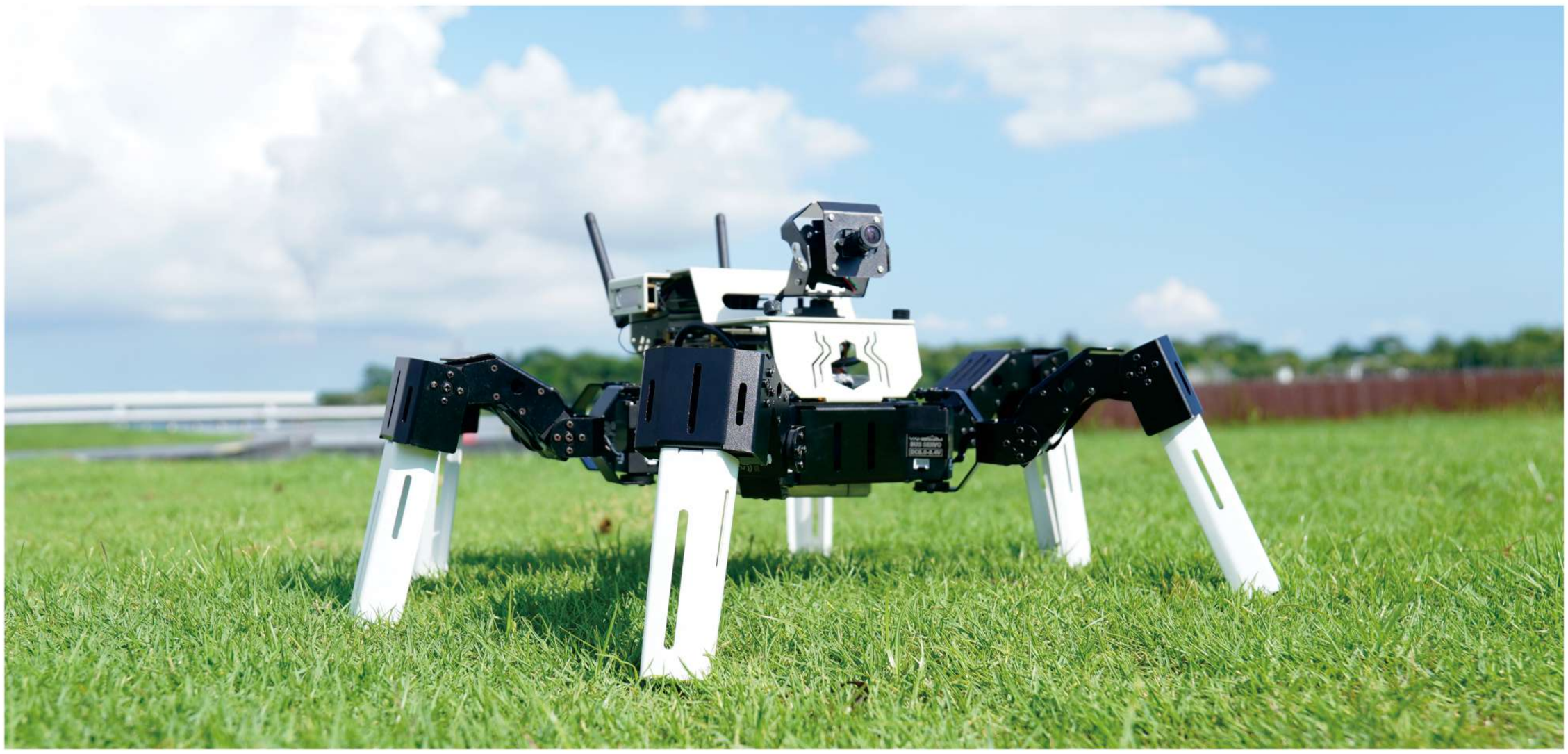
Architecture	Host computer: Raspberry Pi CM5 module
	Slave computer: ESP32
Servo model	15 bus serial port servos
Servo torque	2.3KG·CM
Gripper gripping range	14.4~53.6mm
Screen	320 x 240 pixel full-color IPS
Camera	500MP OV5647
Speaker	8Ω 2W cavity speaker
Microphone	Dual MEMS digital microphones
Storage	64GB TF card
Charging port	Type-C 5V
Charging time	2.5 hours
Material	The fuselage is made of 1mm aerospace-grade aluminum alloy, and the feet are made of ABS.
Working time	2.2 hours
Dimensions	240.47×142.93×168.45mm (Power on)
	250.58×142.99×111.61mm (Power off)
Weight	596g



Multi-legged Bionic Robotics

MUTO

The Muto hexapod robot is a desktop-level bionic hexapod robot with 18 degrees of freedom. It can perform a variety of simulated gaits such as stretching, greeting, shrinking, warming up and squatting. Optional high-performance hardware configurations such as laser lidar, depth camera, and voice interaction module can be installed to enable the Muto hexapod robot to have more SLAM functions.



Hexapod Bionic Structure

The Muto hexapod robot is a desktop-level bionic hexapod robot with 18 degrees of freedom. It can perform a variety of simulated gaits such as stretching, greeting, shrinking, warming up and squatting.

Multiple bionic gaits

Eight carefully designed action groups can command Muto to achieve mimicry with one click. Not only that, users can also let it learn and memorize postures and customize more cute action groups.

Voice interaction gameplay

Equipped with a high-performance voice interaction module, by issuing voice commands, users can control the robot's motion state, color tracking, color recognition and other creative gameplay, so that the robot has the characteristics of "being able to listen and answer"

AI visual interaction

①Color tracking Face tracking ②QR code recognition Visual line patrol ③Machine learning Gesture control ④Deep learning Object detection/bone detection

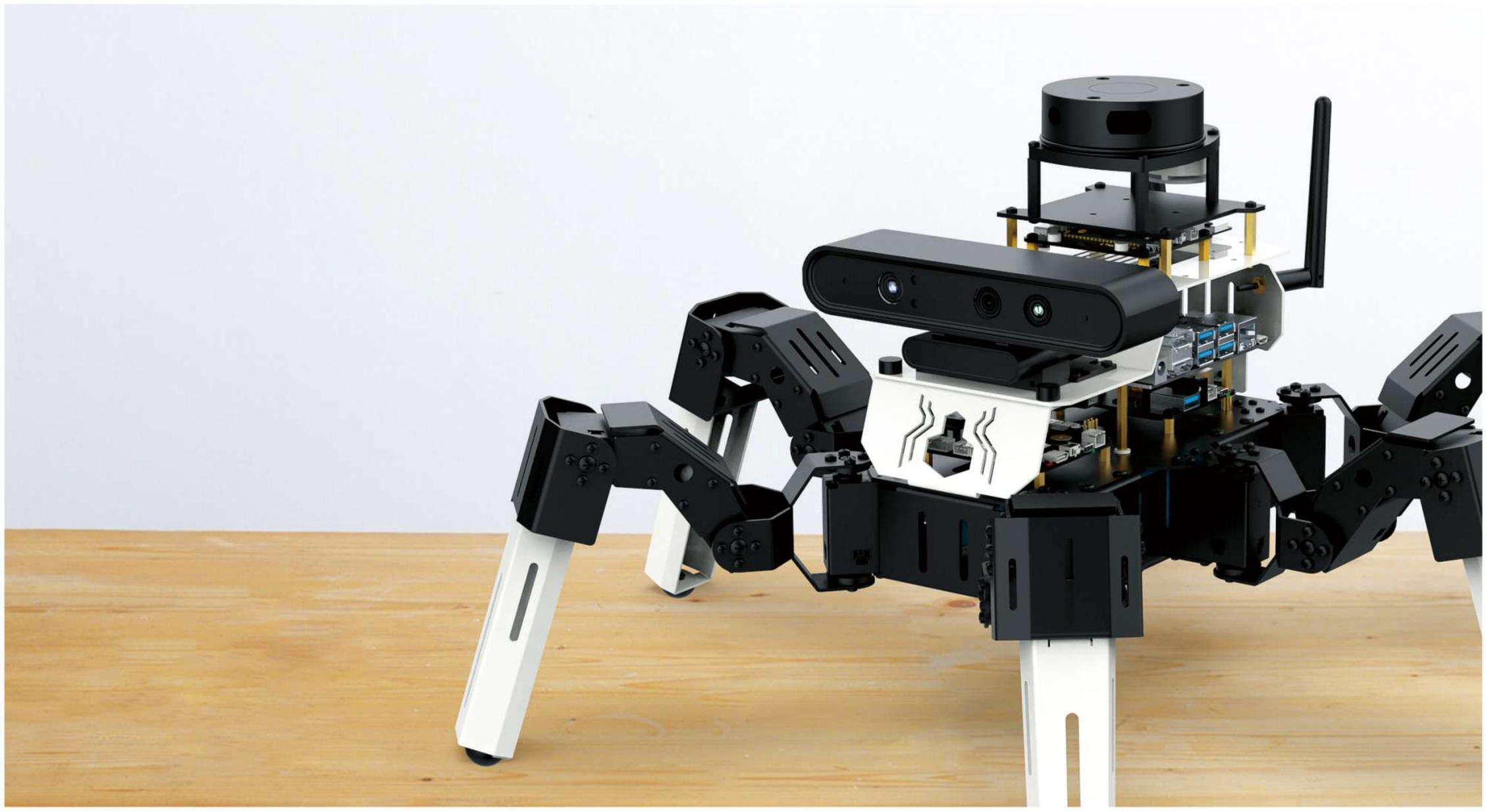
18 degrees of freedom joints

Muto uses 18 high-performance servo steering gears and aluminum alloy structural parts to fix the three joints of elbow, shoulder and hip on each leg of the robot to achieve the true restoration of the movement posture of hexapods

SLAM mapping navigation

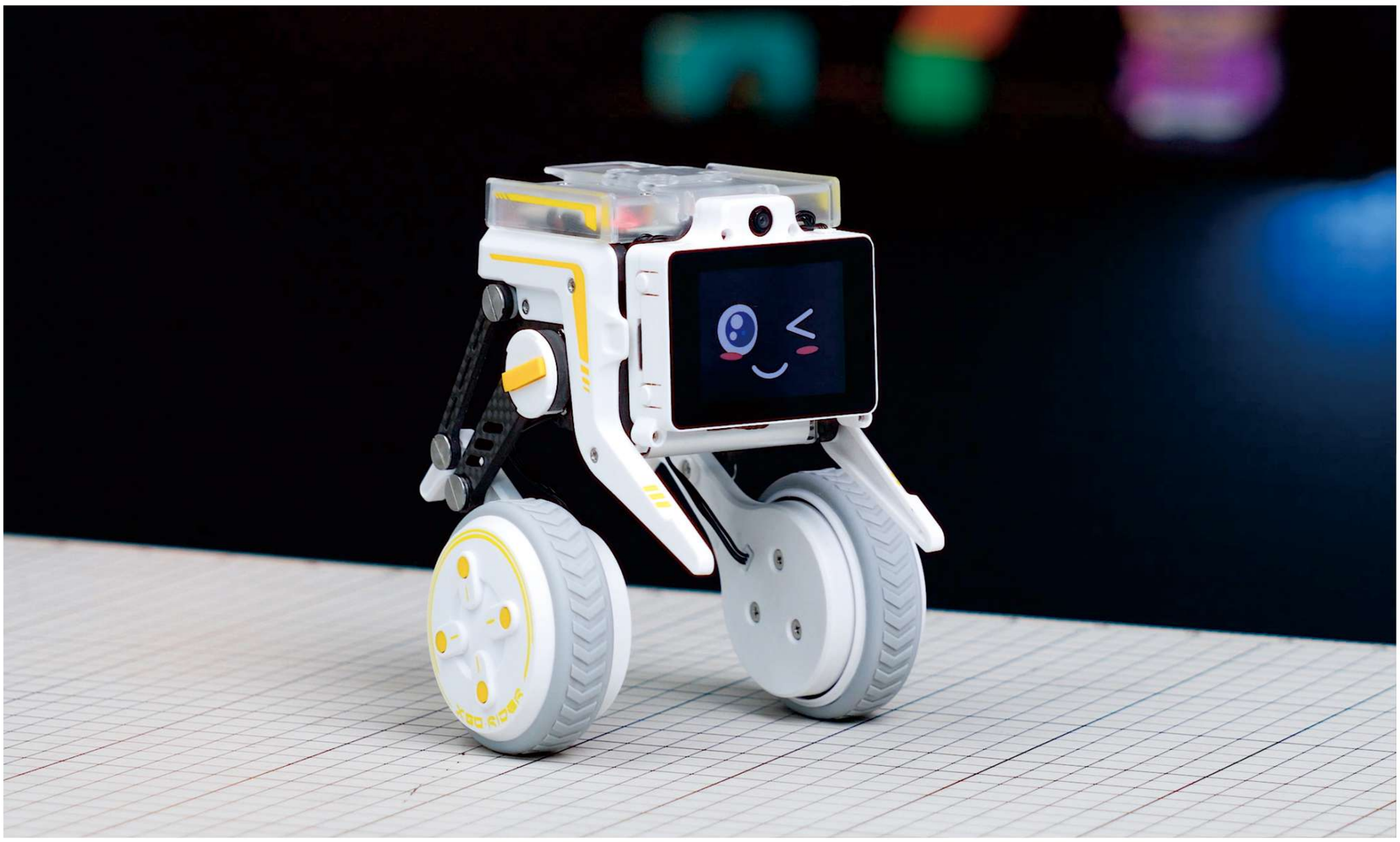
①Support gmapping, cartographer and other algorithm mapping. ②Support path planning, single-point and multi-point autonomous navigation. ③Use RTAB algorithm to integrate vision and lidar to realize robot 3D visual mapping and navigation obstacle avoidance, support global relocation and autonomous positioning.

	Professional Version S2	Flagship Version RS
Controller	Jetson Nano 4G, Raspberry Pi 5	
AI computin power	0.5TFLOPS(FP16)	
Operating system	Raspberry Pi：raspios-bookworm-arm64 JETSON：Ubuntu	Raspberry Pi：raspios-bookworm-arm64 + ROS2 Foxy JETSON：Ubuntu 20.04 LTS + ROS2 Foxy
Programmin language	Python	Python 、C++
Input	High frame rate camera, nine-axis attitude sensor, USB wireless controller	Astra Pro Plus depth camera, laser lidar (SLAM A1/ YDLIDAR 4ROS) voice interaction module, nine-axis attitude sensor, USB wireless controller
Output	Bus serial servo (leg joint), buzzer, OLED display	Voice interaction module, bus serial servo (leg joint), buzzer, OLED display
Remote contro method	Mobile phone APP remote control, USB wireless controller remote control, computer webpage remote control	
Communicatio method	LAN TCP communication, serial communication	
Safety protection	Battery overcharge protection, low voltage protection, over discharge protection, over current protection, short circuit protection	
Number of joints	18 degrees of freedom joints	
Material	Aluminum alloy body Rubber foot end	
Battery life	约3.7小时	约3.5小时
Dimensions	513.4*467.6*224mm	513.4*467.6*251mm
Weight	Jetson Nano：3.0kg；Raspberry Pi：2.9kg	Jetson Nano：3.49kg；Raspberry Pi：3.37kg



Rider-Pi

Rider-Pi is a desktop wheel-legged robot jointly developed by Luwu Technology and Yahboom Technology. It has a built-in inertial measurement unit (IMU) that can adjust joint angles in real time to adapt to different terrain obstacles. Based on the Raspberry Pi CM5 module and using Python programming, it supports a series of AI functions such as face recognition, color tracking/following, QR code motion control, object detection, license plate recognition, gesture following, etc. It supports ChatGPT(extra charge) and can realize a variety of large model applications such as voice question and answer, voice control, text-to-picture, and picture-to-text. Rich learning materials are provided to help you quickly play with the AI wheel-legged robot.



AI Multimodal Large Model

Built-in multimodal AI large model, capable of accurately understanding environmental information within the field of view, easily identifying object names and spatial relationships, and responding in real time through the voice large model, enabling advanced embodied intelligence applications.

Exclusive dynamic expressions

Equipped with a 2.0-inch IPS display, it contains 35 dynamic expressions and supports custom dynamic expressions, making every interaction more vivid and interesting.

Embodied Intelligence Applications

Equipped with a 5-megapixel camera, dual MEMS digital microphones and speakers, and powered by the iFlytek Starfire large model, it supports image recognition, voice recognition and natural language processing, providing rich audio and video interaction and bringing an intelligent interactive experience.

AI visual recognition interaction

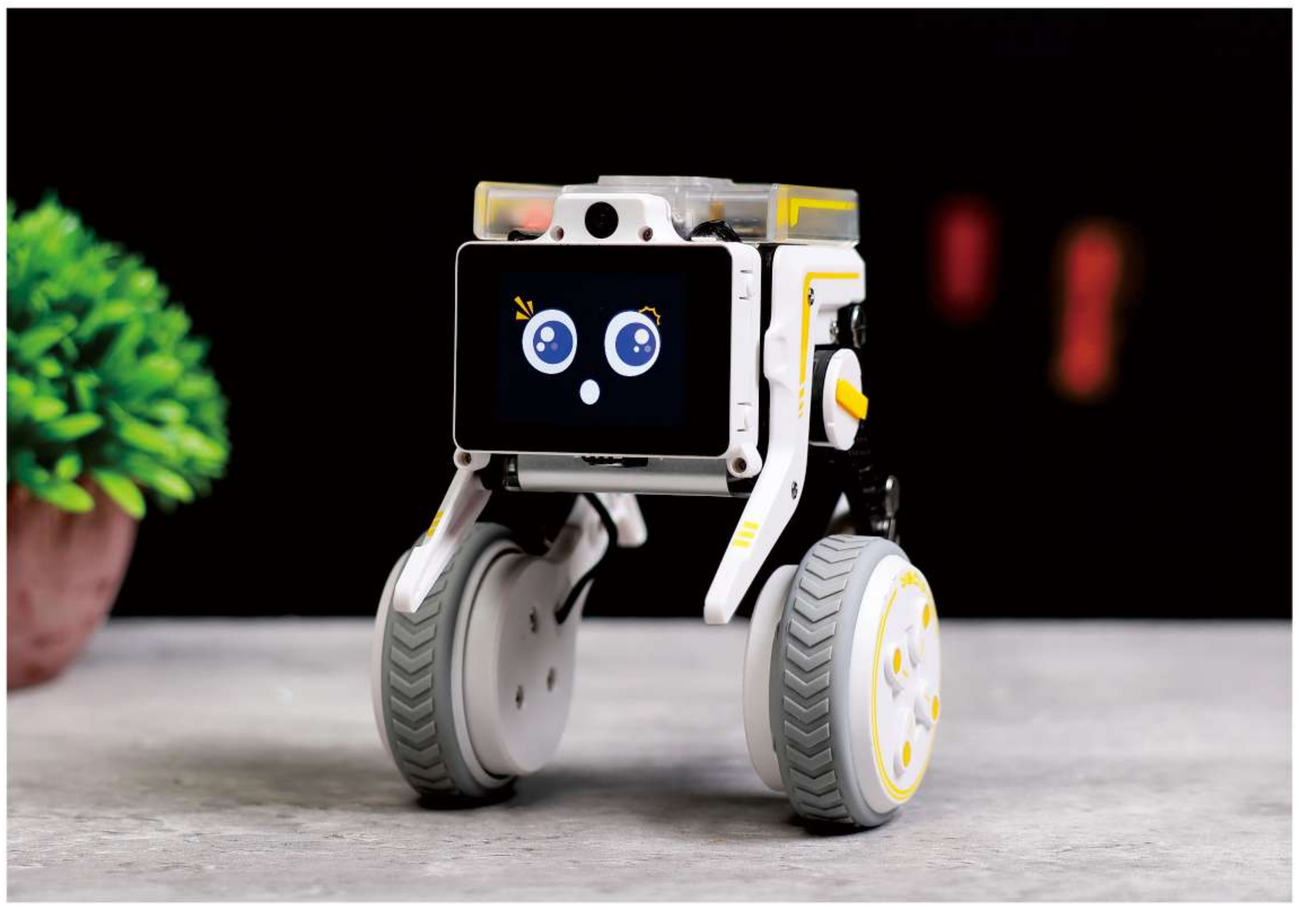
Rider-Pi is equipped with a 5MP camera, dual MEMS digital microphone and speaker, which can easily realize functions such as 3D object recognition, face detection, license plate recognition, gesture control, color tracking, etc.

Wheeled mobility & legged obstacle crossing ability

Rider-Pi adopts two wheel-legged motion joint design, integrated motor and wheels. The linkage wheel-legged structure enables the robot to move smoothly on various terrains, combing the mobility of wheeled robots and the obstacle-crossing ability of legged robots.

Raspberry Pi CM5 module

Rider-Pi has a built-in AI module and uses the Raspberry Pi CM5 chip solution.



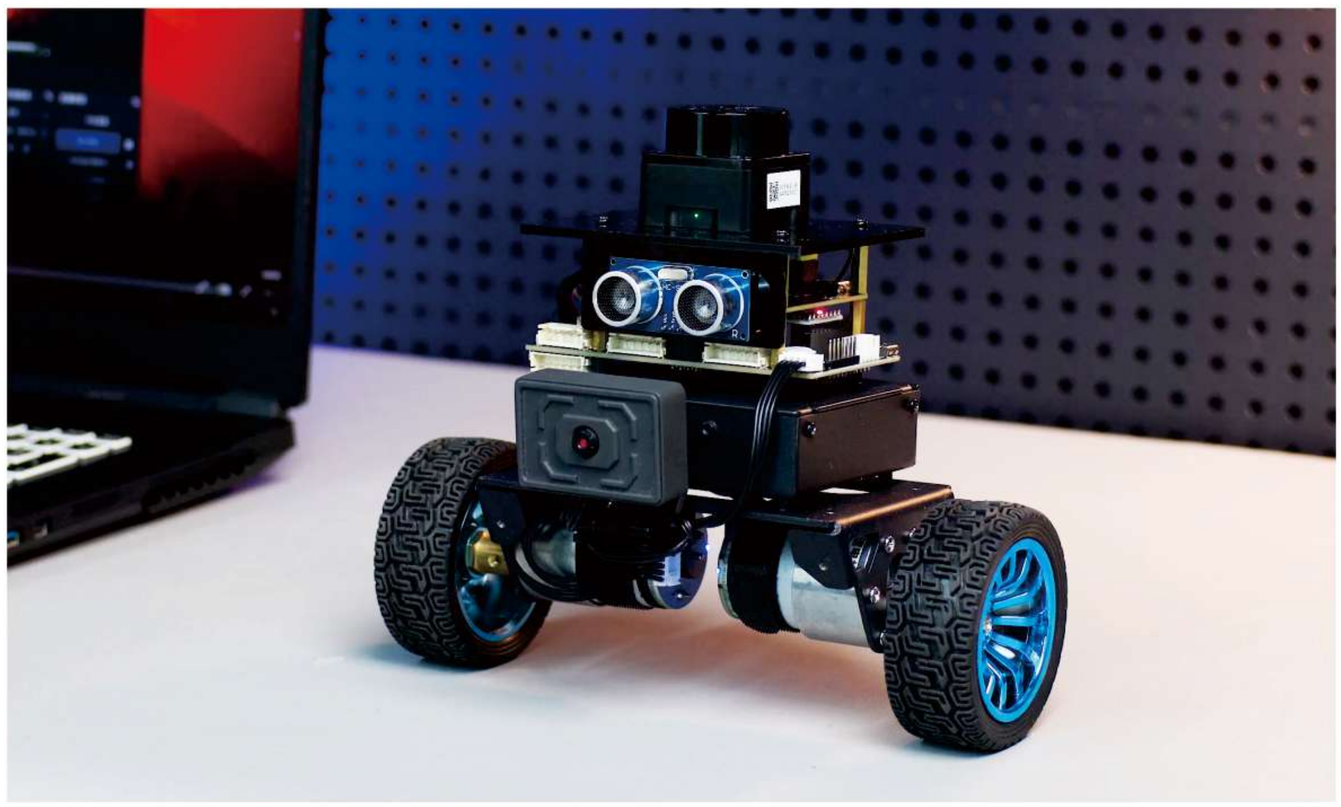


Master	RaspberryPi CM5 (2GB RAM) + ESP32
Programming language	Python
Display	2.0-inch IPS 320X240
Microphone	Dual MEMS digital microphone
Speaker	8Ω 2W speaker
Camera	5MP OV5647
Servo	Serial bus metal servo*2
Battery life	1 hour
Battery	18500 2S 1400mAh
Hub motor	8.4V brushless hub motor*2
Material	Aviation aluminum back cover, ABS body, carbon fiber bracket
Remote control	BT remote control [iOS/Android], WiFi remote control [iOS/Android]
Communication method	LAN TCP communication, BT communication
SD card	32GB
Dimensions	115*135*125mm[Squatting], 115*115*158mm[Standing]
Weight	554g

» Wheeled Self-balancing Robotics

MicroROS Balancing Car

The MicroROS balancing car integrates STM32 and ESP32 dual processors, equipped with a metal chassis, high-power reduction motor and six-axis IMU attitude sensor. It can not only achieve 4 kg load balance and easily cope with climbing challenges, but also achieve obstacle avoidance or following functions through ultrasonic modules. Equipped with TOF LiDAR and ROS-WiFi image transmission module, it supports the wireless transmission of key sensor data such as LiDAR, odometer, camera images to the virtual machine system through MicroROS. The virtual machine performs complex computing tasks, realizes LiDAR mapping navigation and AI visual interaction applications, and is an ideal platform for robot development that integrates learning and practice.



- Virtual machine ROS master control
- ROS2-Humble
- MicroROS wireless communication
- AI visual recognition
- SLAM mapping navigation

Processor	STM32F103RCT6 + ESP32-S3-WROOM-1U-N4R2	
ROS master control	PC virtual machine (Ubuntu22.04+Humble)	
Control method	Mobile phone APP, mouse and keyboard, PC virtual machine, USB wireless controller (extra charge)	
Programming language	C language, Python	
Program download	Serial port, ST-Link	
Motor parameters	Motor solution	520 encoder DC reduction motor*2
	Encoder type	AB phase incremental Hall encoder
	Gear set reduction ratio	1:30
	Motor speed	333±10rpm
	Magnetic ring lines	11 lines
Input	T-mini PLUS LiDAR, ROS-WiFi image transmission module (AI vision advanced version only),motor speed encoder, six-axis IMU, ultrasonic, button	
Output	Motor, OLED display, buzzer	
Communication support	microROS wireless communication, USART, I2C, SPI	
Reserved interface	USART, I2C, SPI, sensor expansion interface	
Battery protection	Over-charge protection, over-current protection, over-discharge protection, short-circuit protection	
Battery life	About 20 hours (self-balancing static)	
Power supply method	2200mAh battery pack (DC5521 elbow discharge interface, DC4017 charging interface)	
Charging method	12.6V-2A power adapter (DC4017 interface)	
Body material	Metal + PCB + acrylic	
Body size	SLAM standard version：194mm*84m*127.59mm AI vision advanced version：194mm*115.59m*127.59mm	
Vehicle weight	SLAM standard version：1023.5g AI vision advanced version：1060g	

PALMSLAM

PALMSLAM is an innovative handheld LiDAR mapping device. Users can easily build maps or measure distances by just holding the device. LiDAR data is transmitted to the virtual machine through the microROS solution, and users can view the mapping effect in real time on the virtual machine or mobile phone APP. Compared with traditional computer mapping solutions, PALMSLAM eliminates the inconvenience of carrying a bulky laptop. Compared to robot-mounted LiDAR mapping, PALMSLAM is more economical, flexible and portable.PALMSLAM is an ideal choice for fast and accurate mapping, easy to operate and cost-effective.

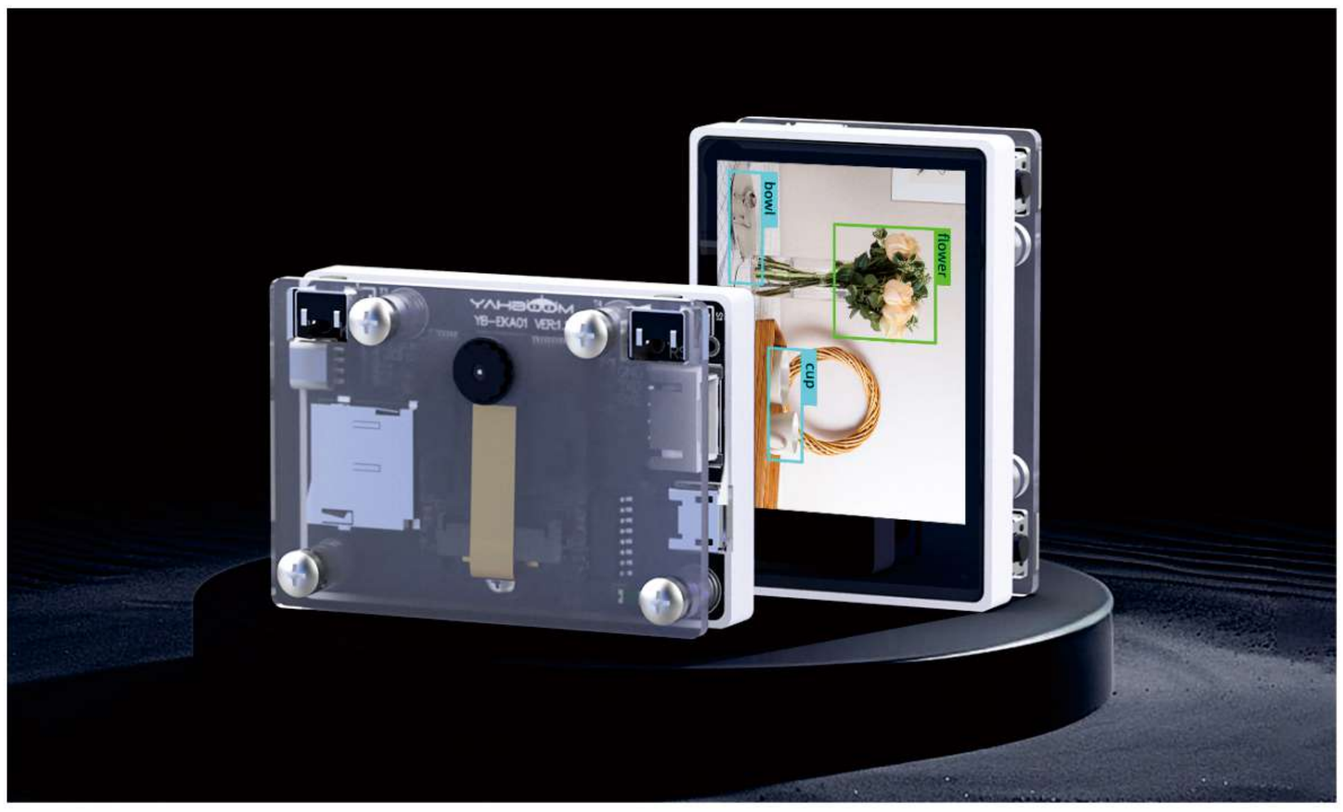


- Virtual machine master control
- SLAM mapping
- microROS
- ROS development system
- Integrated 6-axis IMU
- Compatible with multiple LiDARs

Master	Virtual machine
MCU model	ESP32-S3-WROOM-1U
ROS2 operating system version	Humble
Programming language	Python
Input	Six-axis IMU, buttons, LiDAR
Output	OLED display, LED indicator, buzzer
Power interface	KF301-2P power supply interface, DC4.0*1.7 charging interface
Supply voltage	DC6.5V-8.4V
Proxy connection method	WIFI-UDP, Serial
Antenna model	ipex antenna 1st generation
Buttons	RESET button, BOOT button, KEY1 button
Safety protection	Over-current protection, USB protection, anti-reverse connection protection
Communication mode	LAN WIFI network, serial port communication
ROS serial port baud rate	921600bps(Adjustable)
Body material	Frosted metal (gun body), ABS (base)
Standby current	About 40mA
Operating temperature	Minimum -40°, Maximum +85°
Product size	166.3x72x293.6mm (including bracket) 166.3x72x170.5mm (without bracket)
Weight after assembly	384.3g (without LiDAR)

K210 Visual Recognition Module

Yahboom K210 Visual Recognition Module is a powerful and easy-to-use AI vision module that supports 15 visual functions, including face recognition, hand recognition, mask recognition, image/code recognition, feature detection, digit recognition, multi-color recognition, license plate recognition, road sign recognition, and visual line following. The program source code is fully open source, unlike closed-source products that can only be used but not further developed. Using this module eliminates the complex processes of model training and visual algorithm deployment, lowering the learning curve for AI. Furthermore, we provide over 100 development resources and tutorials to facilitate secondary development and learning, helping you realize a variety of rich AI creative projects.



- AI Visual Recognition
- MicroPython
- 1 TOPS Equivalent Computing Power
- Fully Open Source Code
- Built-in Touchscreen

Processor	Kendryte K210
Development Environment	CanMV IDE
Programming language	MicroPython
Camera	200W pixels
Power supply voltage	5.0V
Operating current	Around 200mA
Interface	USB, UART serial port
Display screen	LCD capacitive touchscreen, 320*240 resolution
Screen size	2.0 inch
Built-in functions	microPython firmware
RGB lights	Built-in RGB light
TF card slot *1	TF card is available; 32GB TF card optional.
Button	Reset button + custom function button
Dimensions	57.3*41.2*17.4mm
Weight	About 40g

K230 Visual Recognition Module

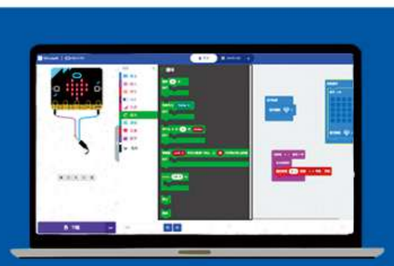
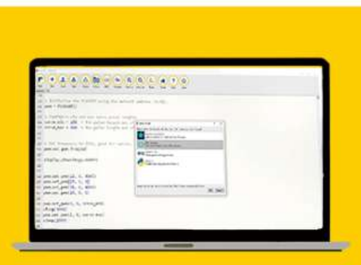
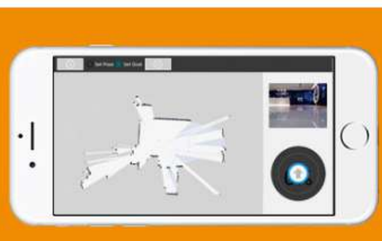
The K230 visual recognition module is designed by Yahboom based on Canaan Technology's new generation K230 edge computing chip, boasting performance 13.7 times that of the K210. It features an onboard 1080P/60FPS high-definition camera, optional capacitive touchscreen, and expansion stand/gimbal. Compact and easily integrated, it's suitable for various AI vision scenarios, making it a top choice for esports competitions. Supporting MicroPython programming, it enables color recognition, facial recognition, and other visual applications without requiring expertise in AI model algorithms, lowering the learning threshold for AI. It also integrates a WiFi chip, supporting AIOT connectivity and allowing access to cloud platform large language models for intelligent dialogue and voice question answering.

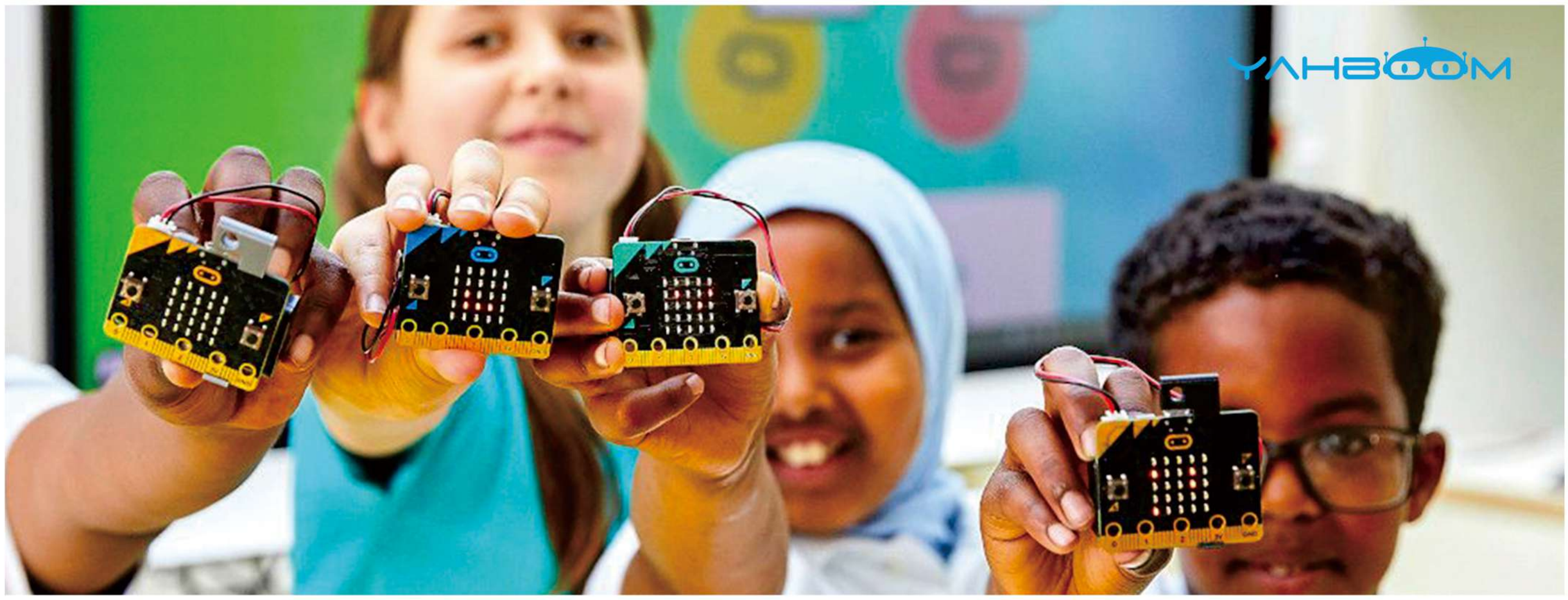


- AI Visual Recognition
- 1GB RAM
- 6 TOPS Equivalent Computing Power
- Online Large Language Model
- Local Model Training Deployment

CPU	CPU 0: RISC-V processor, 0.8GHz, 32KB I-cache, 32KB D-cache, 128KB L2 Cache
	CPU 1: RISC-V processor, 1.6GHz, 32KB I-cache, 32KB D-cache, 256KB L2 Cache, 128-bit RVV 1.0 extension
KPU	6 TOPS equivalent computing power. Supports INT8 and INT16. Typical network performance: Resnet 50 * 85fps @INT8; Mobilenet_v2 * 670fps @INT8; YoloV5S * 38fps @INT8
DPU	3D structured light depth engine, supports a maximum resolution of 1920*1080.
VPU	The H.264 and H.265 encoders and decoders support a maximum resolution of 4096*4096. Encoder performance: 3840*2160@20fps; Decoder performance: 3840*2160@40fps; JPEG codec: supports a maximum resolution of 8K (8192*8192).
Development environment	MicroPython programming CanMV IDE
RAM	1GB LPDDR4
Onboard interface	Speaker connector, fan connector, Type-C interface, serial communication interface, GPIO expansion interface, TF card slot
Onboard functions	Onboard functions include: serial communication interface, GPIO expansion interface, and TF card slot.
Image input	Onboard 2-megapixel HD camera (GC2093)
Display screen	2.4-inch LCD capacitive touchscreen, 640*480 resolution
Power supply method	Type-C/Communication Interface 5V Input
Button	Reset button + custom function button
Operating current	0.8A
Operating power	4W
Dimension	72 × 46 × 18.7 mm
Weight	64.9g

STEM EDUCATION

AGE	7+	12+	15+	18+
Grade	Primary school	Middle school	High school	University, Research Laboratories
Summary	Equipped with a microbit board, combined with basic sensors such as motors, ultrasonic sensors,infrared and other basic sensors to make multi-functional robots, the assembly process is simple, and the control methods are various. Getting started with programming for kids. Various optional building block sensor kit and robot car kit.	The robot is rich in shape and complex in structure. It is equipped with advanced sensors orcamera modules to complete the development ofadvanced robot functions, such as multi-channelpatrolling, Bluetooth control, and the use ofcameras. It is suitable for programming entry andadvanced robot development at middle school orabove.	This stage of the course has a low entry threshold andopen praduct souroe cade, which is suitable forleaming the Python programming language fromscratch. wvith a wealth af robots, it is easy to use in theearly stage, highly scalable, and more difficult in thelater courses. It is suitable for robot introduction,advanced robat development, and robat competitiansfor middle school or above.	The robot is programmed using the ROS operatingsystem and Python language, equipped with a depthcamera and lidar, and can complete functions suchas 3D navigation and mapping and automatic-driving. It is a complete set of solutions from drivingalgorithms to development frameworks. It aims tohelp everyone learn and understand ROS AI robotsand make development easier. It is suitable for entryinto ROS robots, advanced robot development, androbot competitions for university or above.
Programming software	 makecode Graphical programming	 Mu editor	 Jupyter lab  Arduino IDE	 ROS Kendryte IDE
Control software	 Mbit	 YahBoomRobot	 MakerControl	 Yahboom ROS Robot	 PC host computer（V4.0）
Learning objectives	Learn basic graphical programming. From simple robot control to assembling various DIY models, combining sensors and electronic modules, learn programming step by step and practice hands-on skills.	Learn the basics of graphical programming first, thencomplex C language programming, leam the basics ofprogramming from the simple to the deep, and useprogramming knowledge to make small prajects.Graphical programming can better cultivate students,programming and logical thinking. ArduinolDE programming can be used for Follow-up advanced programming to lay a solid foundation.	Learn advanced Python programming, get startedwith artificial intelligence, learn the development of Alfunctions such as robot vision, automatic driving,mobile tracking, and human insurance recognitionand be proficient in the use of OpenCV image pro-cessing library, putty, Jupyter Lab and other devel-opment tools.	Learn Python programming + ROS system develop.ment, deeply develop ROS intelligent robots,complete robotic arm simulation, radar mappingnavigation, 3D mapping navigation, automaticdriving, object recognition, AI neural network modeltraining, and realize the development of robot deeplearning and computer vision application
Accessory products	 Tiny:bit  Micro:bit robot  WOM sensor kit  Building:bit Super kit	 Tinybit pro  Tiny bit plus  Pico Robot Car  Roboduino V2	 Raspbot  MicroROS Pi 5  RDK X3 Robot	 ROSMASTER X3 ROSMASTER X3 Plus ROSMASTER R2 MUTO DOGZILLA DOFBOT JetCobot NVAROBOT
Learning difficulty	★ ★ ★	★ ★ ★ ★	★ ★ ★ ★ ★	★ ★ ★ ★ ★ ★



MICRO:BIT

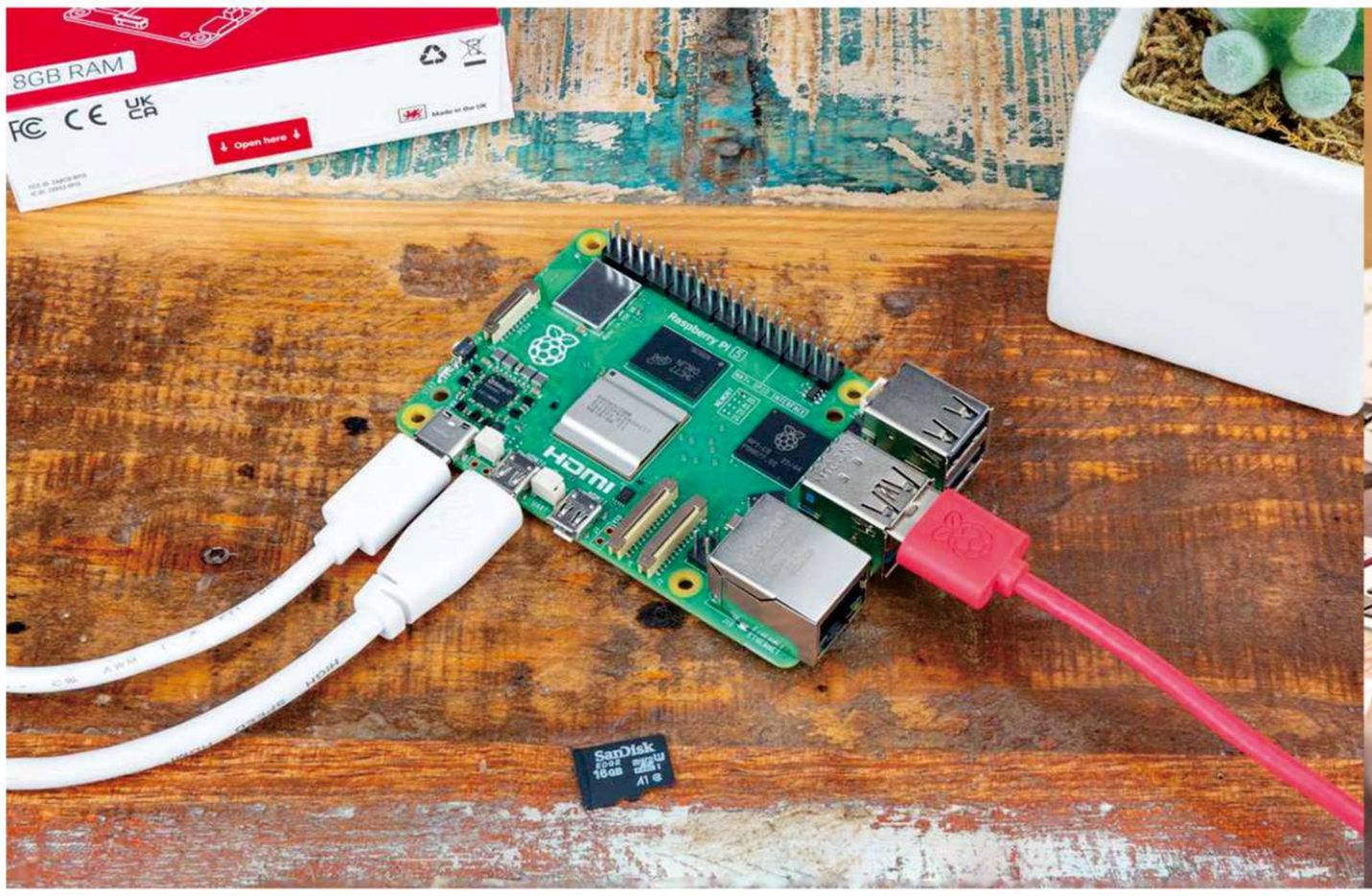
Micro:bit Official authorized Designated agent in China

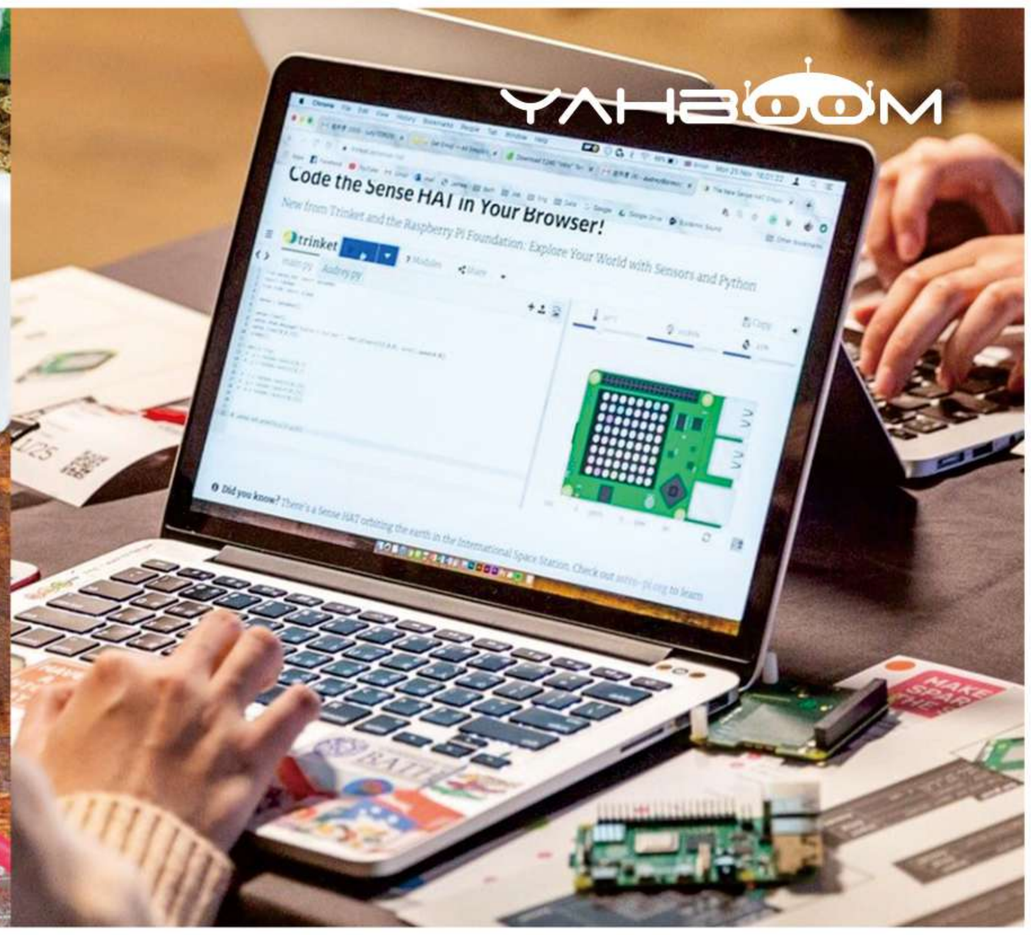
MICRO:BIT is a microcomputer designed by the British Broadcasting Corporation (BBC) for youth programming education and jointly developed by Microsoft, Samsung, ARM, Lancaster University and other partners. Yahboom focuses on the research and development and production of the micro:bit ecosystem. It is a business and a player. The company currently has dozens of sensors, expansion boards, machine kits, electronic modules and other rich peripherals. Independent research and development, we refuse to carry, adhere to the original spirit.



ARDUINO UNO

Arduino is a kind of convenient, flexible, and easy-to-use open source electronic prototyping platform, including hardware (various types of Arduino boards) and (Arduino IDE). Because of its large number of encapsulated function libraries, it is more accessible to the people than hardware platforms such as C51 and STM32. It is not only suitable for rapid prototyping by engineers, but also popular among enthusiasts such as makers/STEAM maker education/programmers because of its simplicity and vulnerability, rich community resources and iterative sharing of global technologies.



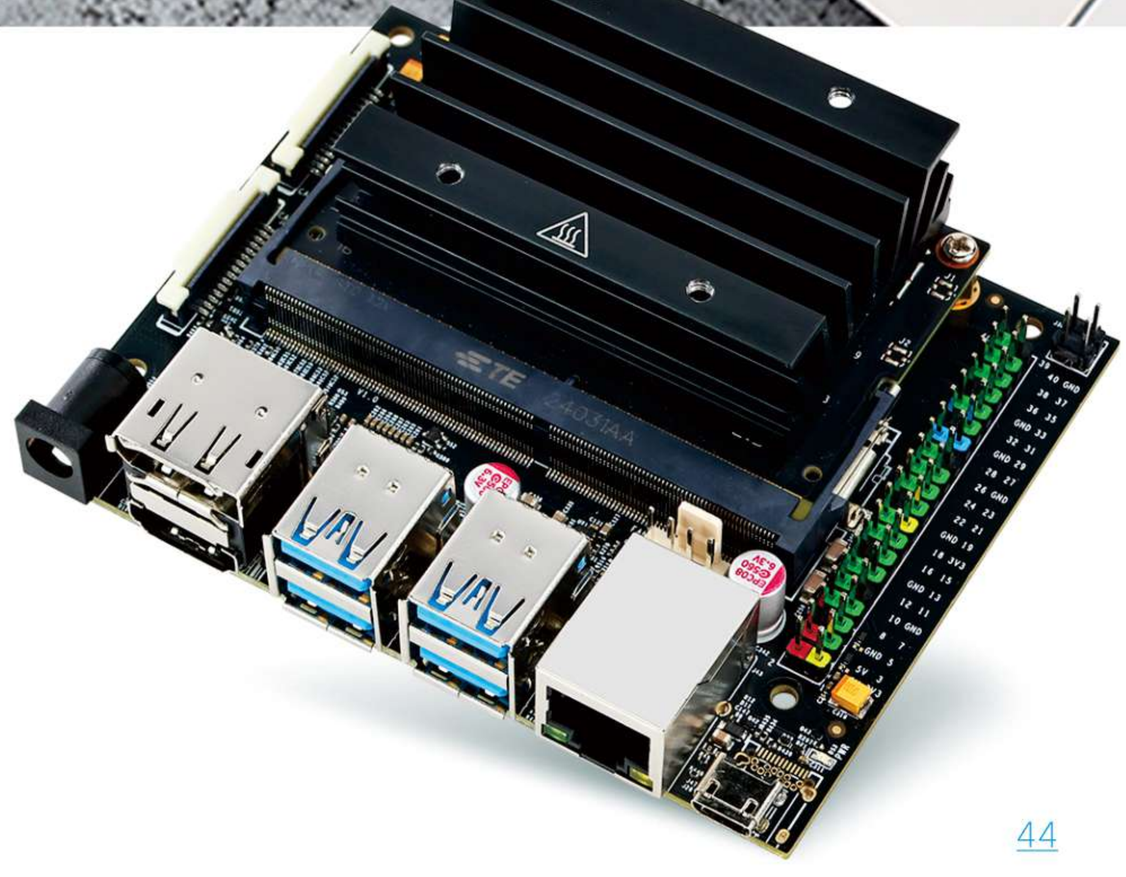


RASPBERRY PI

Raspberry Pi is a tiny single-board computer developed by the UK Raspberry Pi Foundation and is widely used to promote basic computer science education in schools. Featuring a 64-bit quad-core Arm Cortex-A76 processor running at 2.4GHz, Raspberry Pi 5 delivers a ×2 to ×3 increase in CPU performance relative to Raspberry Pi 4. Alongside a substantial uplift in graphics performance from an 800MHz VideoCore VII GPU; dual 4Kp60 display output over HDMI; and state-of-the-art camera support from a rearchitected Raspberry Pi Image Signal Processor, it provides a smooth desktop experience for consumers, and opens the door to new applications for industrial customers.

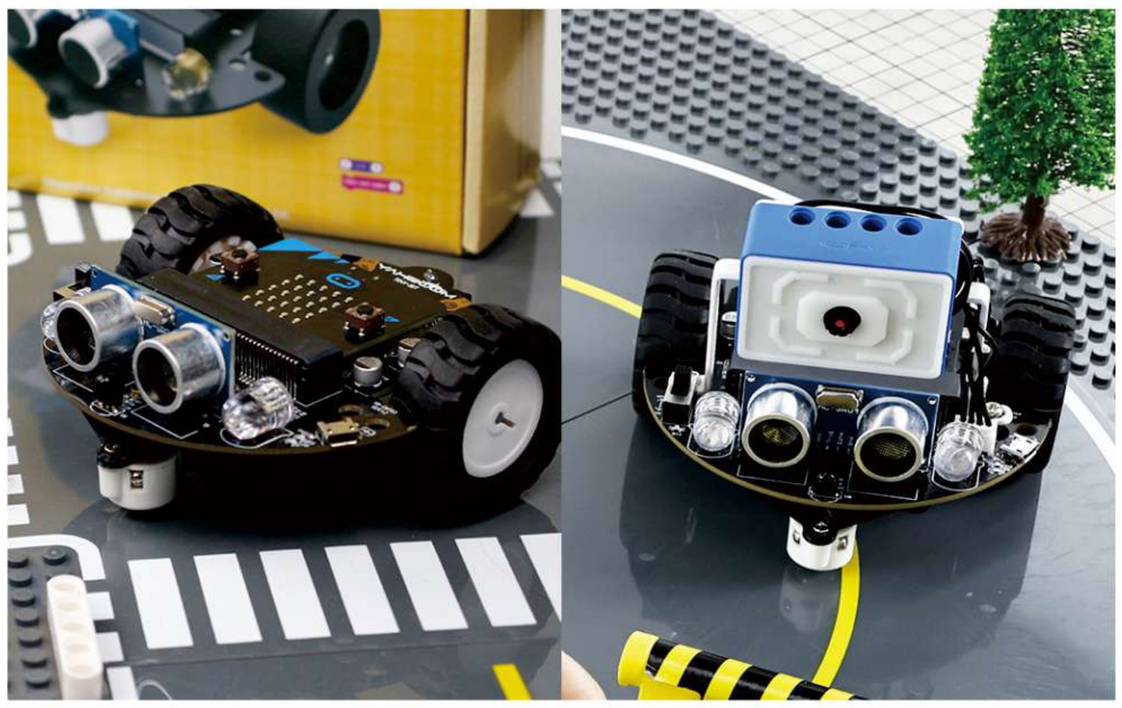
JETSON

Jetson is a series of embedded computing boards launched by NVIDIA for edge computing. These boards are specially designed to accelerate artificial intelligence applications such as machine learning and computer vision. Such as the Jetson Nano B01 SUB, it uses NVIDIA's official original Jetson Nano 4GB core module and comes with 16GB eMMC storage. You can easily andquickly start Jetson board without TF card.Performance, on board resources, size and interface layout are all consistentwith the official kit, which is stable and reliable.



Tiny bit related robot cars

TINY:BIT/TINY:BIT PLUS



TINY BIT: A small robot supports Makecode graphical and Python programming, and integrates tracking sen-sors, ultra-sonic modules, sound sensors, searchlights, programmable RGBlights, buzzers, infrared receiving module and other sensors, which canmake Tiny:bit car realize infrared line patrol, obstacle avoidance, soundcontrol, play music, infrared remote control, APP remote control andother func-tions.

TINY BIT PLUS: It adds a WiFi camera module configuration based on Tiny:bit. Which can capture real-time images and wirelessly transmit the videostream to the mobile APP through the WiFi camera module to remotelycontrol the car.

TINY:BIT PRO



TINY BIT PRO: It is a Al visual robot car based on BBC Micro:bit. lt adopts Makecode graphical programming and is equipped with a powerful K210 visual module. lt can not only complete basic functions such as infraredtracking and obstacle avoidance distance measurement, but also com-binevisual modules to achieve color recognition, number rec-ognition, colorblock tracking, label recognition, label tracking, road sign recognition andvisual line inspection various interesting function.

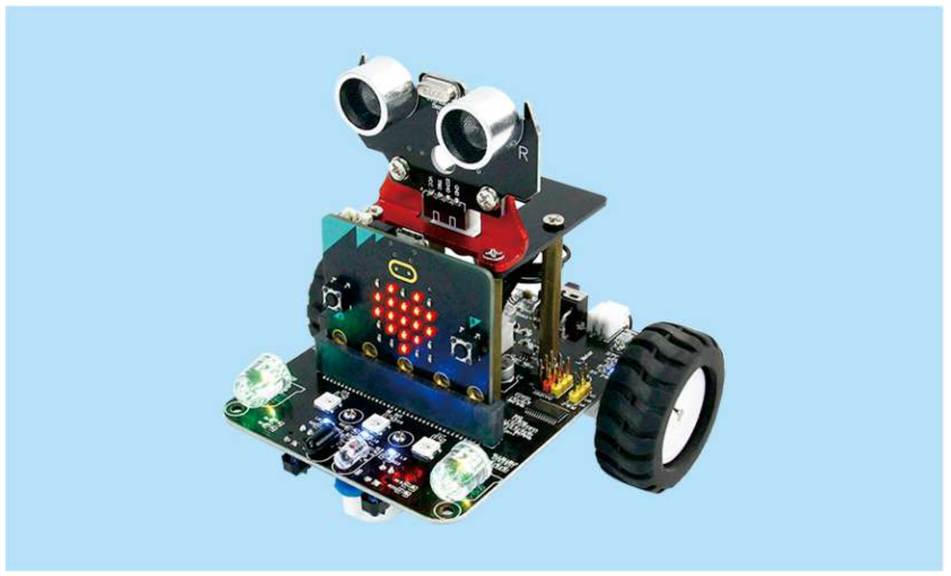
	 Tiny:bit robot car	 Tiny:bit Plus robot car	 Tiny:bit Pro robot car
Hardware configuration	Ultrasonic, tracking sensor, infrared receiver, searchlight, programmable RGB light, microphone, buzzer, alligator clip interface, motor *2	Ultrasonic, tracking sensor, infrared receiver, searchlight, programmable RGB light, microphone, buzzer, alligator clip interface, motor *2, WiFi camera module	Ultrasonic, tracking sensor, infrared receiver, searchlight, programmable RGB light, microphone, buzzer, alligator clip interface, motor *2, K210 visual module
Motor	1:10 DC deceleration motor(Higher speed)		1:210 DC deceleration motor (Lower speed)
Scalability	Support crocodile clip extension		Supports visual recognition extension, crocodile clip extension, and autonomous driving recognition
Target audience	Programming education for beginners		AI programming education for teenagers
Track map	Black-white paper patrol track		Black-white paper patrol track, Mini Autopilot track map(optional)
Summary	Tiny:bit is equipped with sensor accessories and high-speed motors, suitable for use scenarios such as remote control and high-speed movement.	Tiny:bit Plus can realize all the functions of Tiny:bit car, and combine with WiFi camera module to realize APP video remote control and real-time monitoring.	Tiny:bit Pro can realize all the functions of Tiny:bit car, and combine with AI vision to realize more functions and creativity.

For customers who already have a Tinybit car, they can upgrade to a Tinybit plus by purchasing the ESP32 WiFi Camera Module, but they cannot upgrade to a Tinybit Pro by purchasing the K210 module alone. This is because the motors and hardware structures of the two are incompatible.

MICRO:BIT&ARDUINO series

MICRO：BIT

The car uses a micro:bit dot matrix screen as the body, and uses a delicate metal motor, high-quality tires and a sturdy bracket to create a small and beautiful appearance. Using easy-to-learn Makecode graphical programming, it supports Bluetooth APP, infrared and handle remote control. Support changing three styles.



WOM SENSOR KIT

This world of module programmable robot kit includes 1 professional sensor expansion board, 2 building block servos, 10 electronic sensor modules and 300+ building block parts. Support MakeCode and Python programming, suitable for users over 6 years old. We have created more than 20 kinds of models, and also provided detailed experimental cases for children to learn programming and sensor knowledge while playing with building blocks.



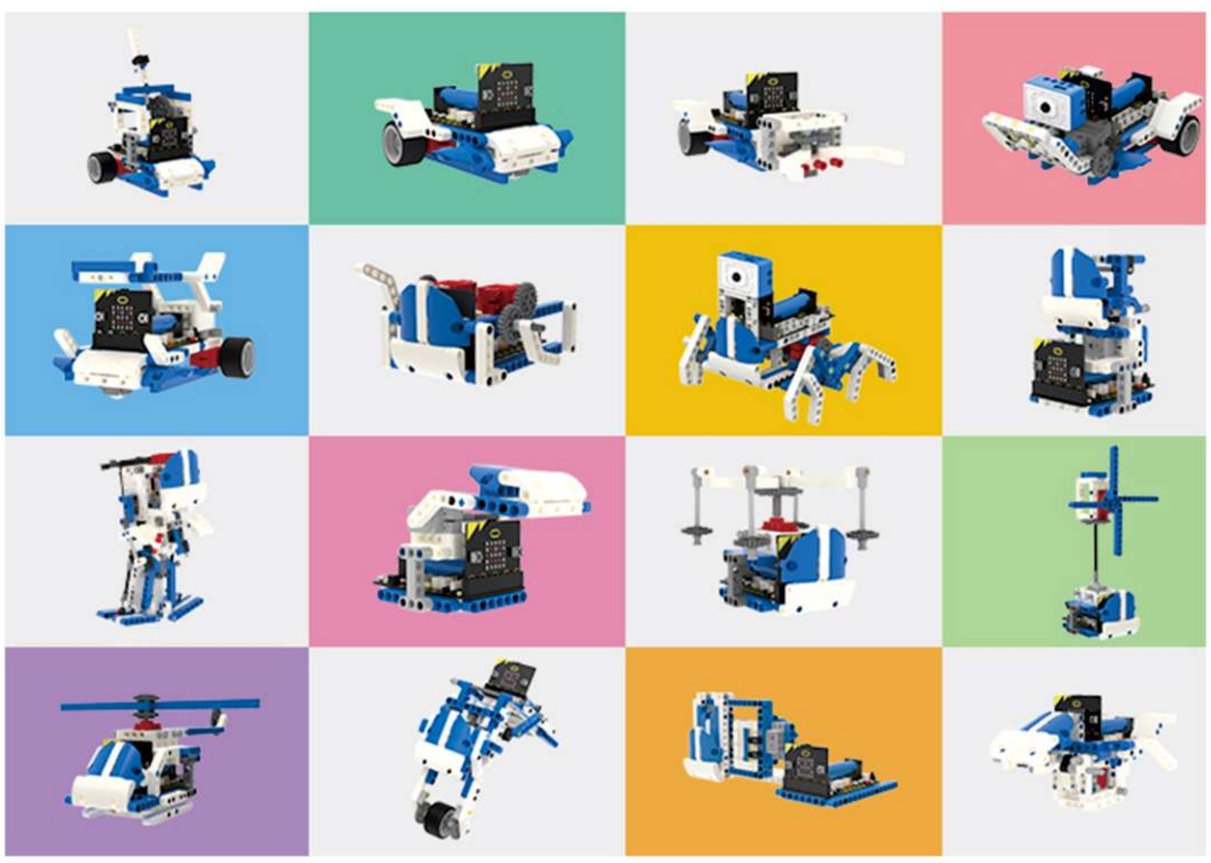




16 IN 1 BUILDING:BIT SUPER KIT

16-in-1 superkit programmable building block kit is designed based on BBC Micro:bit, which is composed of Super:bit expansion board, building block servo/motor, battery and 358 building block parts.16 kinds of building block models + full color printing project instruction manual





ROBODUINO V2

Roboduino V2 is a multifunctional robot car based on Yahboom UNO R3. The all-metal body with 60MM Mecanum wheels, combined with 4-channel motor independent drive,an ESP32 WiFi camera module,can realize real-time video transmission through the mobile phone APP. The kit also includes a multi-function expansion board, ultrasonic module, 3-channel tracking module, infrared remote control, etc. Users can realize RGB light special effects, line tracking, obstacle avoidance, infrared remote control and other functions through C language programming.



Sensor accessories



Speech broadcast module



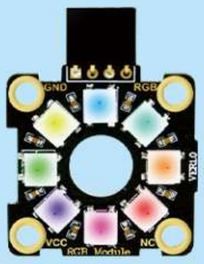
Button module



Gesture Recognition module



Ultrasonic module



Colorful RGB light



Laser ranging sensor

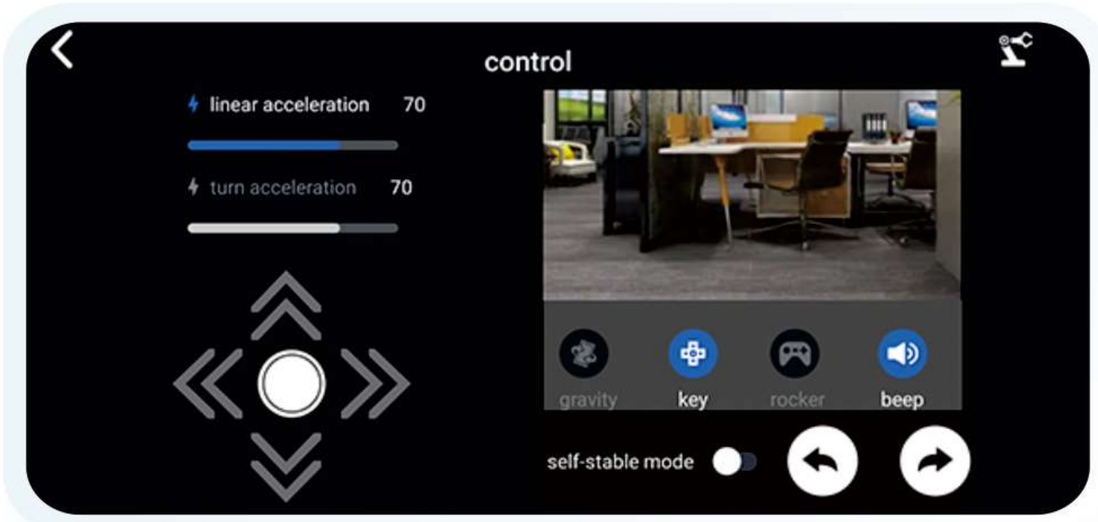
Control software

YahBoomRobot

YahBoomRobot is an integrated APP that controls multiple robots designed by Yahboom. Users can enjoy controlling multiple robots by downloading one APP, avoiding the tediousness of downloading independent control APPs for each robot. It is comprehensive and easy to use. It supports iOS and Android installation and use, and is well received by users. (Currently supports multiple robot products under the Yahboom brand)

Android iOS





MakerControl

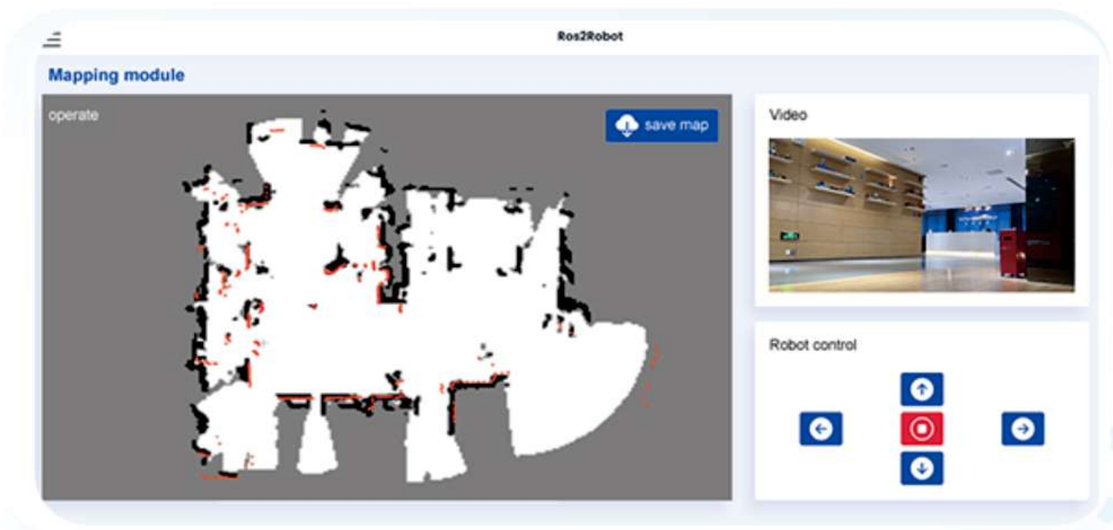
MakerControl is a simple and universal DIY quick remote control APP that can help makers, developers and players quickly connect and remotely control DIY works. It supports iOS and Android installation and use. It can easily remotely control: servo groups, robotic arms, FPV remote control cars, ROS robots and other products through streamlined instructions and open user interfaces. We will continue to update more interesting remote control cases to lower the threshold of DIY. Users can even remotely control the robots they designed according to open communication protocols, so that communication is no longer a bottleneck for creativity.

Android iOS

Yahboom ROS Robot

Yahboom ROS Robot is an APP designed for controlling the ROS robot operating system. It supports ROS1/ROS2 and can be installed and used on iOS and Android. Its functions include ROS system dynamic control, SLAM map navigation and camera image transmission: ROS Robot makes ROS mobile robots not limited to PC control, and remote control debugging on mobile phones is simpler and faster.

Android iOS



Yahboom CAM

Yahboom CAM is a simple WiFi image transmission remote control APP that can help makers, developers and players quickly connect and remotely control DIY works. It supports iOS and Android installation and use. It communicates with the image transmission module via WiFi, supports real-time display of the video screen of the image transmission module, and can also simply remotely control robots and 2DOF PTZ.



Android iOS



Mbit

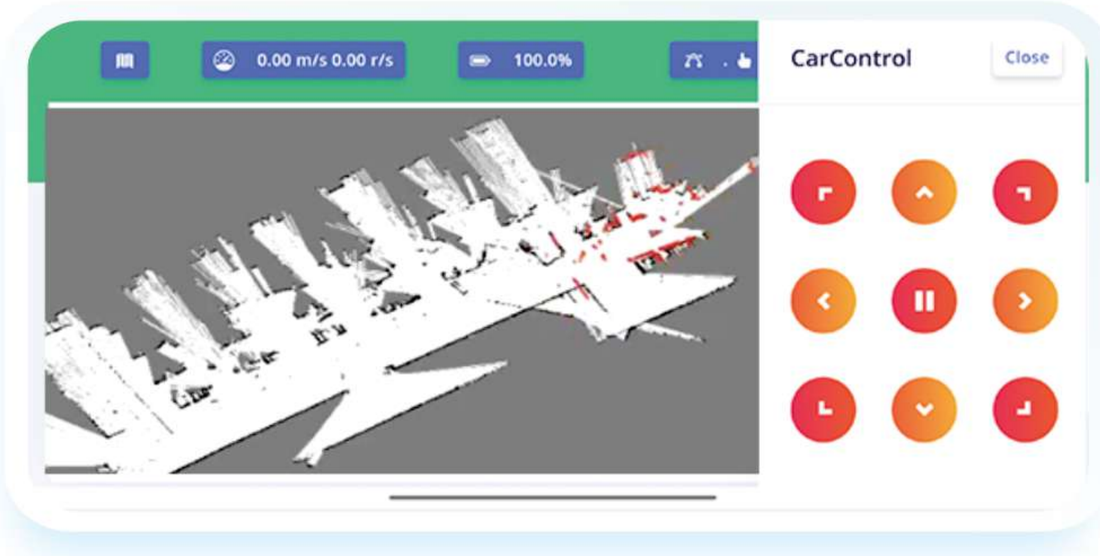
Mbit is an APP designed for micro:bit robots, which supports iOS and Android installation and use. It communicates with micro:bit via Bluetooth. In addition to simple control of robot movement, buzzer music playback, switching RGB light colors and light effects, it also switches the robot's modes, including obstacle avoidance mode and line patrol mode, which is suitable for remote control of micro:bit products.

Android iOS

NAVROBO

NAVROBO APP is an application designed for NAVROBO robot, supporting Android systems.Its functions include ROS system dynamic control, SLAM mapping navigation and image transmission.

Android iOS



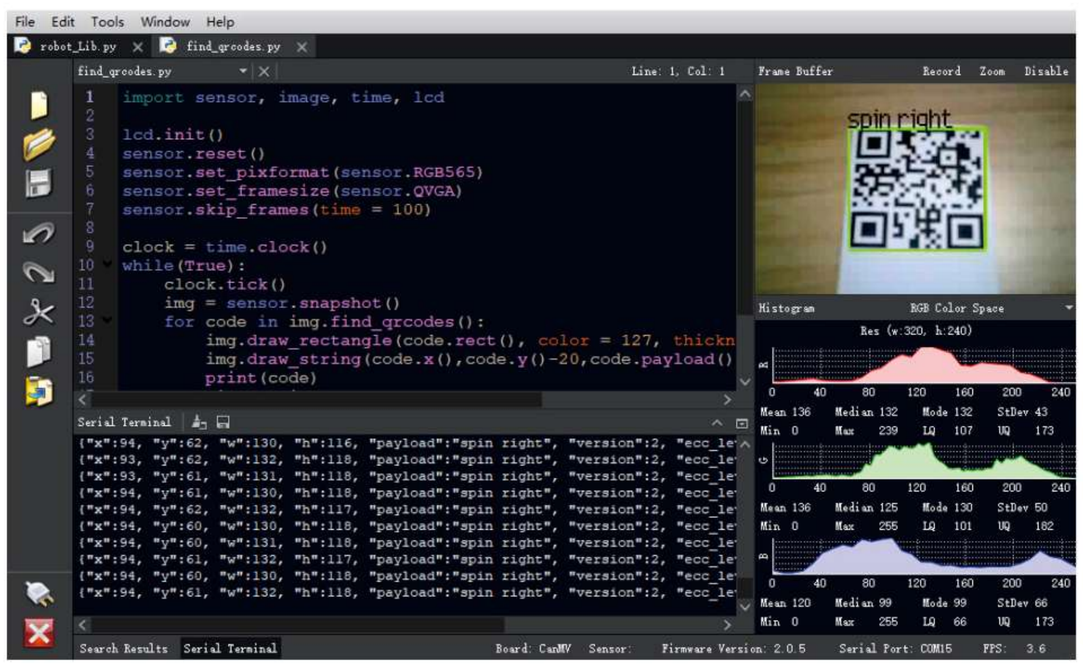
Programming software

ROS2 Operating System

ROS2 is a completely new upgrade to ROS, providing a suite of tools, code libraries, and conventions to help developers efficiently build complex robotic applications. Compared to ROS, ROS2 boasts enhanced functionality, higher operating efficiency, more reliable real-time performance, and multi-device support.

windows Mac Lunix





CanMV IDE

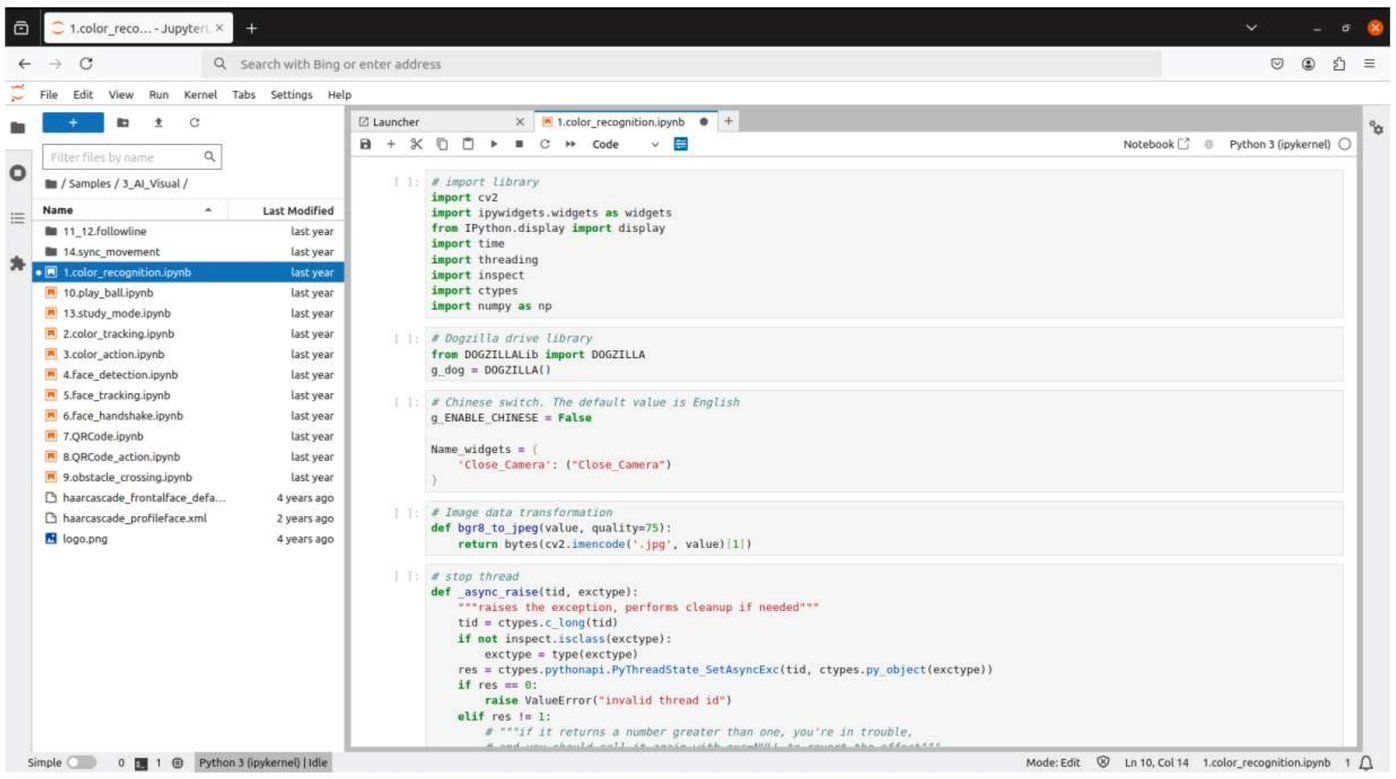
CanMVIDE is an integrated K210 chip development environment consisting of a powerful text editor, a frame buffer viewer, a histogram display, and an integrated serial terminal for debugging output. It supports microPython syntax and has functions such as real-time camera display, video recording, file transfer, function prompts, keyword search and replacement, online program running, serial terminal debugging, and burning K210 firmware.

windows Mac

Jupyter Lab

As a web-based integrated development environment, Jupyter Lab allows you to operate the terminal, open interactive mode, view camera images, and other functions. It also has a flexible and powerful user interface. Python interactive mode allows you to directly enter code, execute it, and get results immediately. Therefore, Python interactive mode is mainly used to debug Python code and is suitable for Raspberry Pi and Jetson series development boards.

windows Mac Lunix

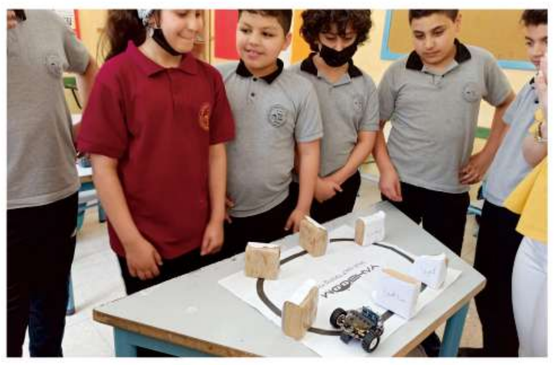


windows Mac Lunix

Cooperation Case







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