Elephant Robotics 大象机器人

Artificial Intelligence Kit 2023

—

人工智能套装 2023

深圳市大象机器人科技有限公司

地址：深圳市福田区华强北街道深南中路2070号电子科技大厦D座F403
邮箱：support@elephantrobotics.com
电话：+86(0755)-8696-8565 (工作日9:30-18:30)
网址：www.elephantrobotics.com

Shenzhen Elephant Robotics Technology Co., Ltd

Address: Room 403, Black Ark Center, Electronics&Technology Building,
              Futian Dist, Shenzhen, China 518000
Email: support@elephantrobotics.com
Phone: +86(0755)-8696-8565 (working day 9:30-18:30)
Website: www.elephantrobotics.com

⚠ 警告

在使用本产品之前，请阅读本手册中所有说明及警告提示。

- 为避免火灾或电击危险，请勿将产品暴露在雨中或潮湿的地方。
- 请勿将产品放在火中或靠近火处。
- 请勿将本产品放置或使用在炎热潮湿的地方。
- 请勿暴力拆卸本产品。
- 请勿将产品暴露在过度的冲击下，如从高处跌落。
- 不要将产品暴露在超过60℃(140℃F)的高温下。

⚠ 开机必读

本册为人工智能套装2023产品画册
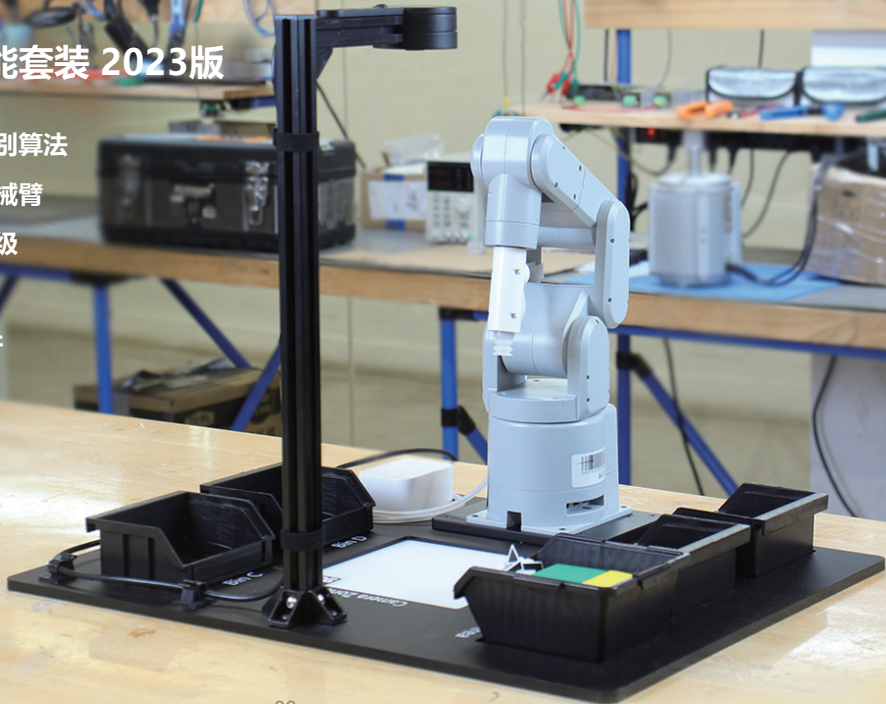
关于本产品的操作使用及二次开发，请先在大象机器人官网阅读并下载Gitbook相关指导说明.

下载链接：https://docs.elephantrobotics.com/docs/gitbook/

人工智能套装 2023版

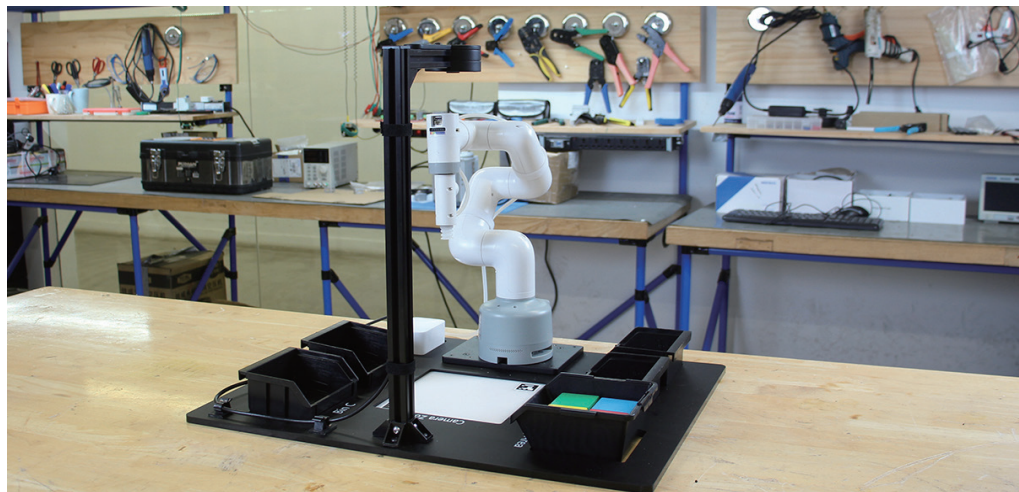**5大视觉识别算法**

6种适配机械臂

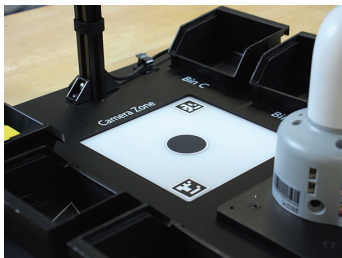**7大硬件升级**

8大学习点

可视化软件

人工智能教育平台

人工智能套装 2023版 全新升级，5大视觉识别算法、6种适配机械臂、7大硬件升级、8大学习点并支持可视化软件，是定位抓取、自动分拣模块为一体的入门级人工智能套装。基于python平台，可通过开发软件实现机械臂的控制，简单易学，能够快速入门学习人工智能基础知识，启发创新思维，领悟开源创意文化。

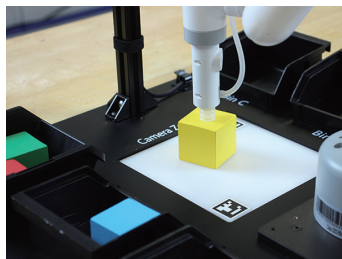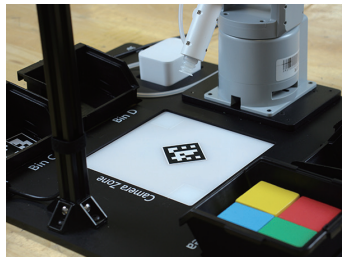本套装扩展性好，开放性高，可以被用于多种用途。可易用高校实训平台、机器人学科搭建、机器人实验室或个人学习与使用。

5大视觉识别算法

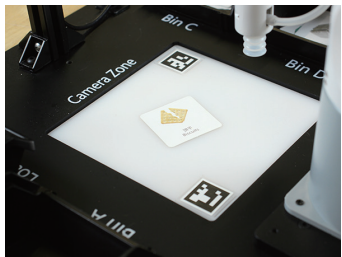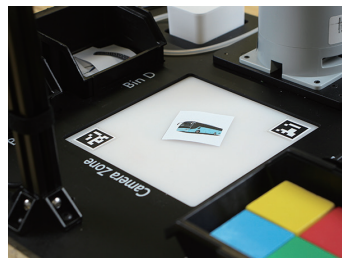四种颜色木块、不同形状卡片任意选择，4种ID二维码识别学习二维和三维世界之间的投影关系，图像特征点带你学习图像分割、保存图片特征，深度学习yolov5算法，让你了解神经网络。

形状识别

颜色识别

AR二维码识别

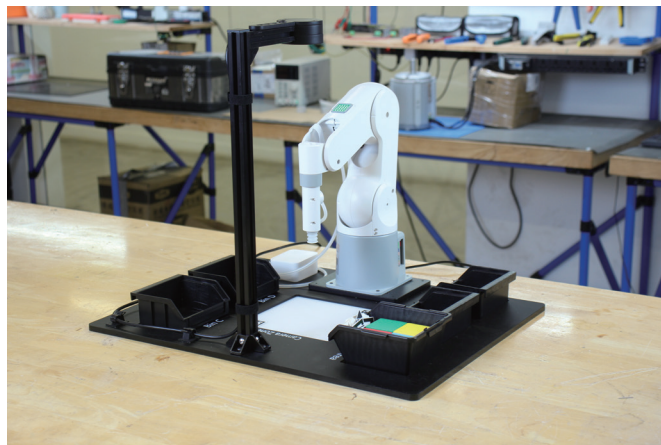特征点识别

yolov5识别

6种适配机械臂

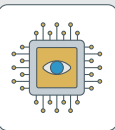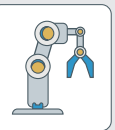支持my系列M5Stack和树莓派版本。

你可以学到什么?

OpenCV　　Python编程　　Ros学习　　逆运动学　　手眼标定　　机器视觉　　机器人控制原理　　末端执行器使用
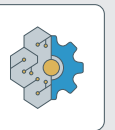
可视化软件

支持可视化软件操作，提供自定义简单操作方法，快速开启人工智能套装。

产品参数

名称	人工智能套装 2023版
整体尺寸	500X400X405mm
识别速度	颜色/形状/二维码: 300ms 特征点/yolov5: 600ms
识别精度	3mm
摄像头名称	USB无畸变摄像头
图像像素	2M 1080p
支持图像格式	MJPG/YUY2
像元尺寸	3.0umx3.0um

最高帧率	MJPG：1920*1080@30fps YUV：1920*1080@30fps
USB 协议	标准 UVC 协议
电源供应	DC5V 90mA
视场角度	110°无畸变
镜头焦距	2.8mm
支持的系统	Windows XP/7/8/10/VISTA/SEVEN/MAC LINUX(include uvc)/树莓派/Android 4.2+

套装组件

★ 1. 小零件盒 x4

★ 2. 大零件盒

★ 3. 摄像头型材 x2

★ 4. 摄像头

☆ 5. 零件包

☆ 6. 黑白魔术贴

★ 7. 机械臂底座

★ 8. 垂直吸泵

☆ 9. 垂直吸泵连接线

☆ 10. 图像卡片彩块

★ 11. 亚克力底板

实体星：代表硬件升级
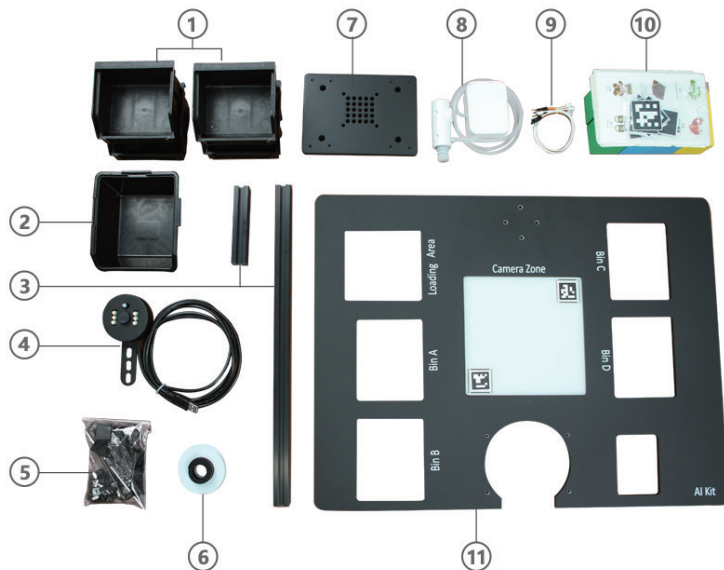
⚠ Warning

Before using myCobot artificial intelligence kit read all instructions and cautionary markings in this manual

1. Do not expose the product to rain or moisture to reduce fire or shock hazard.
2. Do not place the product in or near fire.
3. Do not leave the product in a car in hot or humid weather.
4. Do not disassemble, crush or pierce the product.
5. Do not expose the product to excessive shock such as dropping from a high place.
6. Do not expose the product to high temperatures above 60 °C (140 °F).

⚠ Attention

Regarding the operation and secondary development of artificial intelligence kit 2023, please read and download **Gitbook** before using it.

Official Website：https://docs.elephantrobotics.com/docs/gitbook-en/
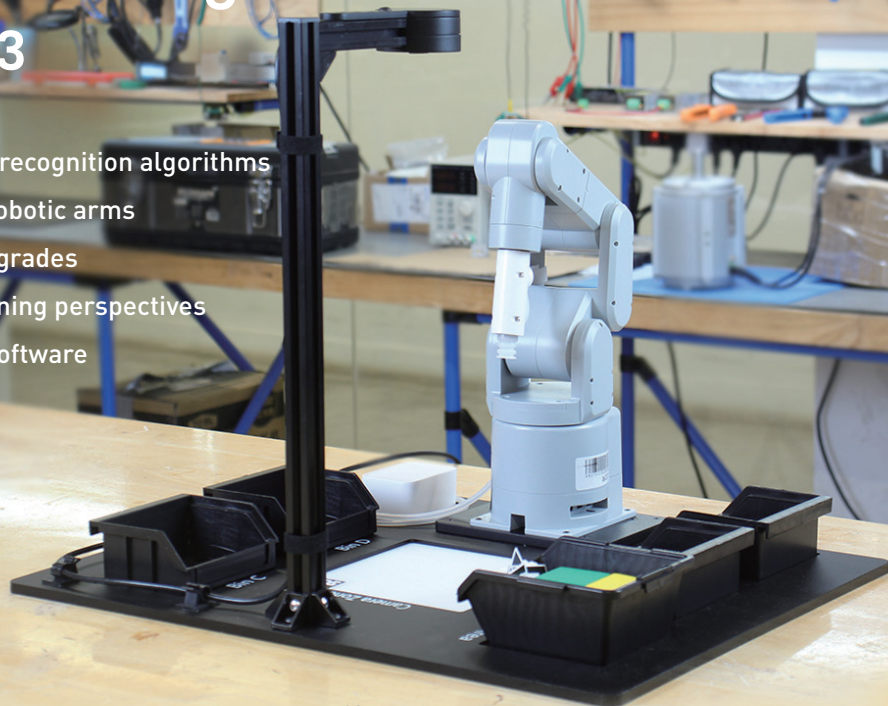
Artificial Intelligence Kit 2023

- 5 major visual recognition algorithms
- 6 compatible robotic arms
- 7 hardware upgrades
- 8 robotics learning perspectives
- Visualization software

ARTIFICIAL INTELLIGENCE EDUCATION PLATFORM

The Artificial Intelligence Kit 2023 is newly upgraded with 5 major visual recognition algorithms and 7 hardware updates, supporting 6 robotic arms of Elephant Robotics. Users can learn major robotics knowledge from 8 perspectives and use visualization software with this kit. It can achieve positioning, grabbing, and automatic sorting. Based on the Python platform, the control of the robotic arm can be realized through the software. Users can learn the basics of artificial intelligence, inspire innovative creation, and enjoy the open source creative culture with AI Kit 2023.

The Artificial Intelligence Kit 2023 has good expandability and high openness, and can be used for multiple purposes. It can be easily used for higher education training platforms, robotics study and research, or personal learning and project development.
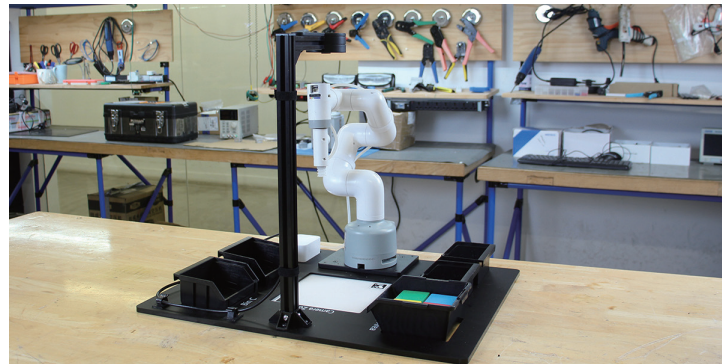
5MAJOR VISUAL RECOGNITION

AI kit has 5 built-in main visual recognition algorithms and users can use different colored wooden blocks and different shaped cards for the recognition function. Also, users can use 4 types of QR
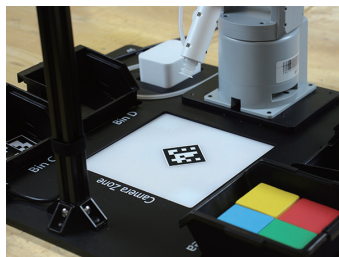
CODE recognition to learn the relationship between 2D and 3D. Feature point recognition helps users learn to understand image segmentation and features and learn YOLOv5 algorithm quickly.
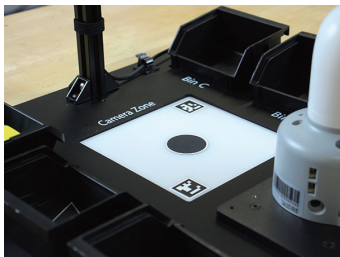
Shape recognition
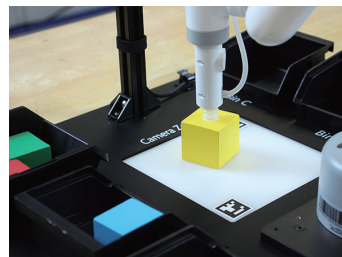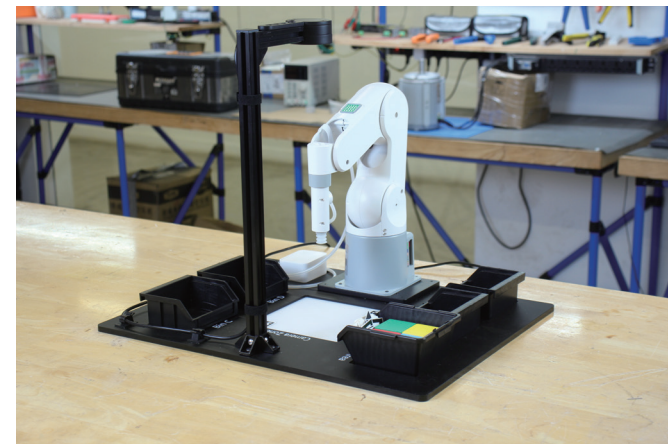

Color recognition

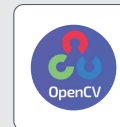AR code recognition

Feature point recognition

YOLOv5 recognition

6KINDS OF ADAPTIVE ROBOT ARMS

It is compatible with 6 robotic arms of Elephant Robotics, supports M5Stack and Raspberry Pi versions.
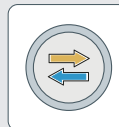

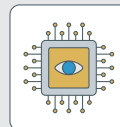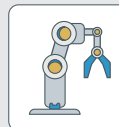
What you will learn?

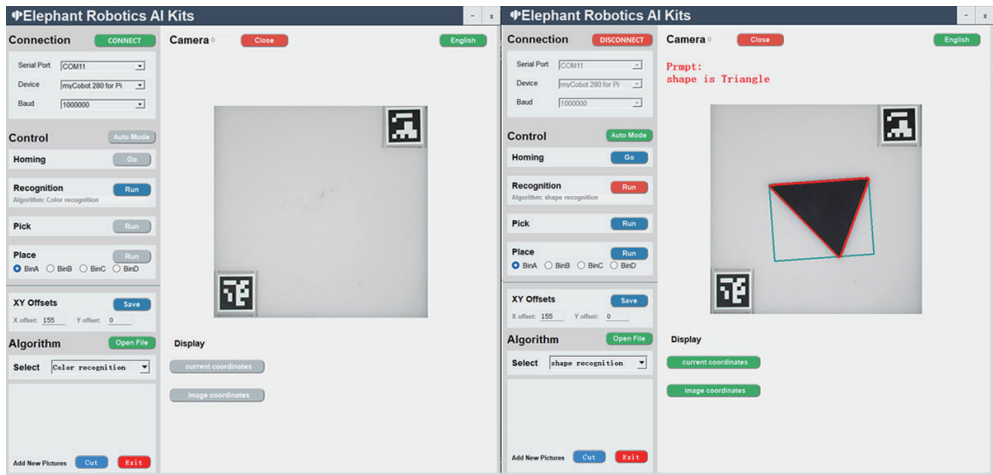| OpenCV | Python | Ros | Inverse kinematics | Hand-eye calibration | Robot vision | Robot control principle | End-effector use |

VISUALIZATION SOFTWARE

The Artificial Intelligence Kit 2023 supports visual software operation, provides customized and simple operation methods. Users can quickly start the artificial intelligence learning journey.

PRODUCT PARAMETER

Product Name	AI Kit 2023
Total measurement	500X400X405mm
Recognition speed	Color/shape/QR code: 300ms Feature points/YOLOv5: 600ms
Recognition accuracy	3mm
Camera name	USB distortion free camera
Image pixels	2M 1080p
Supported image formats	MJPG/YUY2
Pixel size	3.0umx3.0um

Maximum frame rate	MJPG: 1920*1080@30fps YUV: 1920*1080@30fps
USB protocol	Standard UVC protocol
Power supply	DC5V 90mA
Field of view	110° no distortion
Lens focal length	2.8mm
Supported system	Windows XP/7/8/10/VISTA/ SEVEN/MAC LINUX(include uvc)/ Raspberry Pi/Android 4.2+

KIT COMPONENTS

★ 1. Small bin x4

★ 2. Big bin

★ 3. Camera extrusion stand x2

★ 4. Camera

☆ 5. Accessories pack

☆ 6. Black and white velcro

★ 7. Arm base

★ 8. Suction pump

☆ 9.Suction pump connection wire

☆ 10.Image cards&Wooden blocks

★ 11. Acrylic plate

Physical Star: Represents a hardware upgrade
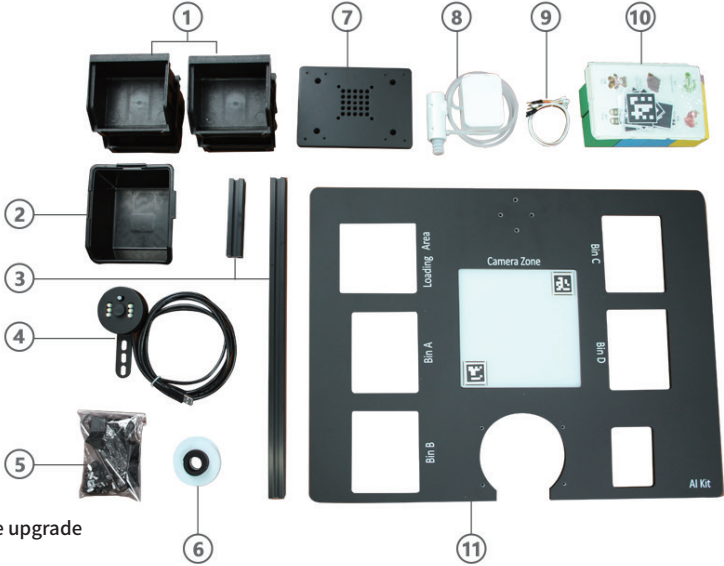
电子件

保修期限	保修服务
≤3个月	由用户拆卸后寄回，我司免费更换并承担往返运费(仅一次)
3-6个月	由用户拆卸后寄回并承担返运费，我司免费更换(仅一次)
≥6个月	客户需自己重新购买

结构件

保修期限	保修服务
≤1年	我司免费提供新的零件，由客户自行承担运费(仅一次)
≥1年	客户需自己重新购买

特别说明: 在交付产品的保修期内，本公司仅对正常使用机器人时发生的故障进行免费修理。

但在以下情况下，将对客户收取修理费用(即使在保修期内):

(1) 因不同于手册内容的错误使用以及使用不当而导致的损坏或故障

(2) 客户未经授权进行拆卸导致的故障

(3) 属于外壳等部件自然的消耗，磨损及老化

(4) 因调整不当或未经授权进行修理而导致的损坏

(5) 因地震、洪水等自然灾害导致的损坏

因此，请严格遵照本手册及相关手册的指示对机器人进行操作。

WARRANTY CARD

Customer Information (Required):

Purchaser _____ Order No. _____ Phone _____

Address _____ Logistics Receipt Date _____

Product problem description(Required):

_____

If you need to apply for warranty service, please contact our customer service to confirm the detailed information. After confirmation, please fill in the card and send it back together with the product and the attached invoice. **Note: Our company reserves the right to explain and modify the warranty card of this product within the scope of the law.**

- Return service is limited to goods not opened within 7 days after the receipt date of logistics of the products. The freight or other risks incurred in return shall be borne by the customer.
- Customers should provide the purchasing invoice and warranty card as the warranty certification when a warranty is being asked.
- Elephant Robotics will be responsible for the hardware faults of products caused by the normal using during the warranty period.
- The warranty period starts from the date of purchase or the receipt date of the logistics.
- The faulty parts from the products will be owned by Elephant Robotics, and the appropriate cost will be charged if necessary.

If you need to apply for warranty service, please contact our customer service first to confirm the detailed information.

Electrical Parts	
Warranty Period	**Warranty Services**
≤3 months	Customers need to send it back after disassembly, Elephant Robotics shall send a new one for free and bear the freight out and home.
3-6 months	Customers need to send it back after disassembly and bear the freight out and home, Elephant Robotics shall send a new one for free.
≥6 months	Customers need to buy it themselves.
Structure Parts	
≤1 year	Elephant Robotics offers free new components once, customs shall bear the freight.
≥1 year	Customers need to buy it themselves.

During the warranty period of the delivered product, the company only repairs the malfunctions that occur during normal use of the robot for free. However, in the following cases, the customer will be charged for repairs (even during the warranty period):
• Damage or malfunction caused by incorrect use and improper use different from the contents of the manual.
• Failure caused by unauthorized disassembly by the customer.
• Damage caused by improper adjustment or unauthorized repairs.
• Damage caused by natural disasters such as earthquakes and floods.

Therefore, please strictly follow the instructions in this manual and related manual to operate the robot.