PUDU

SwiftBot

All-powerful Delivery Robot

Redefining human-robot relationship

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SwiftBot

Powered by industry-leading collision sensing technology and Pudu-developed advanced algorithm, SwiftBot aims at being the most intelligent and secure commercial delivery robot. SwiftBot can recognize passer-by and initiatively give way to pedestrian in a timely manner. Even in a highly dynamic and complex environment, SwiftBot can conduct and complete its tasks with ease, while at the same time surprises you with its multifunctionality， high-reliability and fashionable technology.

Dimension	Machine: 488*593*1288mm Carton size: 675x595x1360mm Wooden case size: 703x621x1496mm
Machine Weight	59kg/49kg
Maximum Loads	35kg
Trays	Size: 433*502mm Default 3*trays
Battery Life	10H~24H
Charging Time	4.5H
Path Clearance	Min 80cm
Cruise Speed	0.5-1.2m/s
Climbing Angle	5°
Door-opening Method	Automatic
Positioning Method	Marker, Laser and Fusion
Dispatching	Max 20 Robots
Charging	Wire or Automatic
Obstacle Detection Angle	Front 260° Back 180°

Microphone Array
10.1’ Touch Screen
RGBD Camera
RGB Camera
Electric Door
Adjustable Tray
Bottom Tray(nonadjustable)
Laser Projection Module
Lidar
RGBD Camera
Positioning Camera
Adaptable Cup Holder
RGB Camera
Machine Body
Lidar
Charging Pile Electrode
Pudu
SwiftBot

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Omnidirectional Perception Capability

Comprehensive utilization of sensing technology to secure safe deliveries

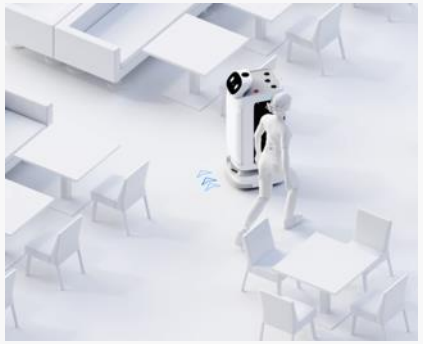
- 3 * RGBD camera + 2*RGB camera + 2*Lidar
- 260° extra-wide front detection scope and 180 ° at the back
- Accurately detect obstacles and stop within 1.5s seconds in case of obstacles
- Effective human detection distance over 3 meters in front and 1.5 meters at back

Initiative Make-way for Pedestrian

Improving efficiency and performance in rush hour

- SwiftBot is designed to work in busy and dynamic environment with courtesy and efficiency.
- Supported by rear sensors, accurate human detection and environmental perception algorithm, SwiftBot is capable of giving way to people initiatively. When human is detected, it will decide to move sideways or backwards, then continue its job.
- It can:.
  Lateral make-way for facing pedestrian
  Lateral make-way for parallel pedestrian
  Backward make-way for facing pedestrian
  Safe-following of parallel pedestrian

Accurate recognition of pedestrians in dynamic environment, proactive route anticipation of passers-by and initiative avoidance in advance



Lateral make-way for facing pedestrian

- The passage is wide enough for SwiftBot and pedestrians to pass at the same time
- SwiftBot takes the initiative to pass on the other side

Backward make-way for facing pedestrian

- The width of passage is not enough for SwiftBot and pedestrians to pass at the same time
- SwiftBot initiatively moves backward and makes ways if there is a suitable stopping point behind

Lateral make-way for parallel pedestrian

- The passage is wide enough for SwiftBot and pedestrians to pass at the same time
- SwiftBot actively leans to the other side

Safe-following of parallel pedestrian

- The width of passage is not enough for Swift and pedestrians to pass at the same time
- SwiftBot slows down and keeps an appropriate distance with the pedestrian ahead

Realtime Visualized Status

Every step of SwiftBot is visible and understandable

SwiftBot can laser-project its path on the ground as a real-time caution for the pedestrians. The route of SwiftBot in coming 1-2 seconds can be displayed on the ground. The faster it moves, the longer route is shown. With the visualized marching route, SwiftBot ‘s intention can be fully aware of and it can cooperate better with people.

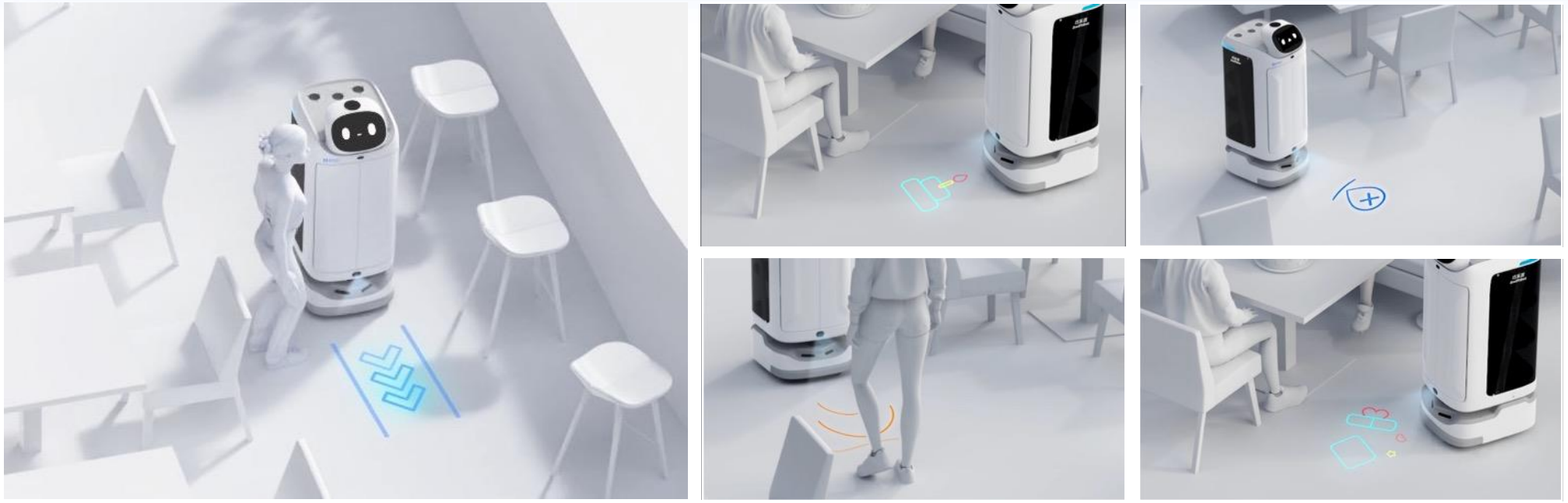
Innovative Projection Interaction

Enhancing Experiences and Efficiency

The projection interaction of SwiftBot fulfills below functions:

- One step door control
- Realtime path projection
- Machine status indicators
- Pattern interaction in special modes

Innovative Projection Interaction



With laser projection, SwiftBot can create a more intimate ambience and provide an intelligent experience for the customers.

Advanced Protection Mechanism for Special Population

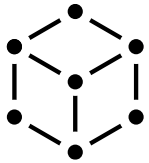
SwiftBot is designed with the advanced protection algorithms to project the safety of elderly and children in the same environment.

SwiftBot will

- Proactively detect if any special groups people around
- In advance slow down after recognizing the elderly and children

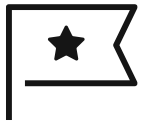
Multiple Serving Modes

Food Delivery Mode



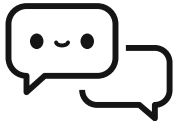
Delivery Mode

Cruise Mode



Guiding Mode

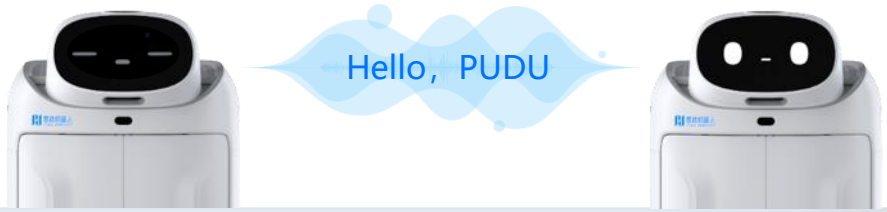
Birthday Mode



Interaction Mode

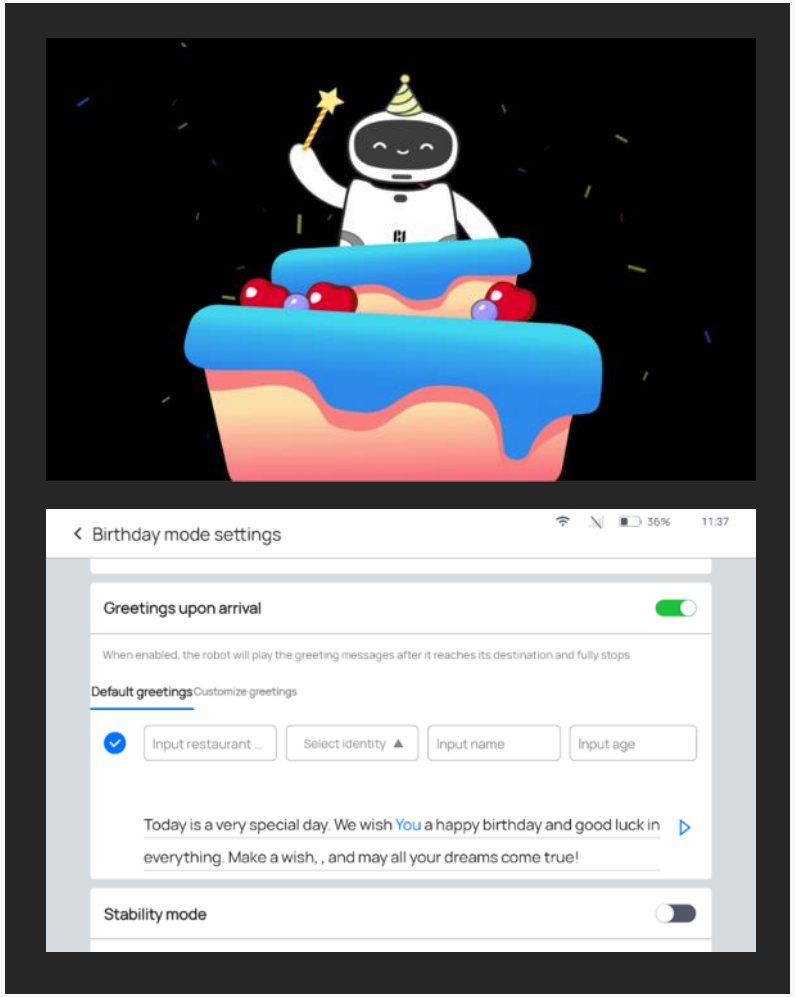
Intelligent Guiding

SwiftBot supports voice control to activate the guiding mode and powered by advanced autonomous path-planning algorithm, it will select the optimal path and lead the customers to their table.



Birthday Mode

SwiftBot offers a wide range of functions in Birthday Mode such as birthday notes customization, music customization, laser projection interaction etc, giving customers a better experience and happy ambience.



Mission at-1-call

Pudu Watch

Pudu Pager

Pudu Link

SwiftBot supports Pudu Pager and Pudu Link calling function. Simply with one click, SwiftBot can receive and conduct the missions, making it incredibly convenient for the user to assign and manage tasks.

Automated Pass-through

Safely and automatically pass through E-gates or Electric glass doors by simply installing Bluetooth control modules at sites.

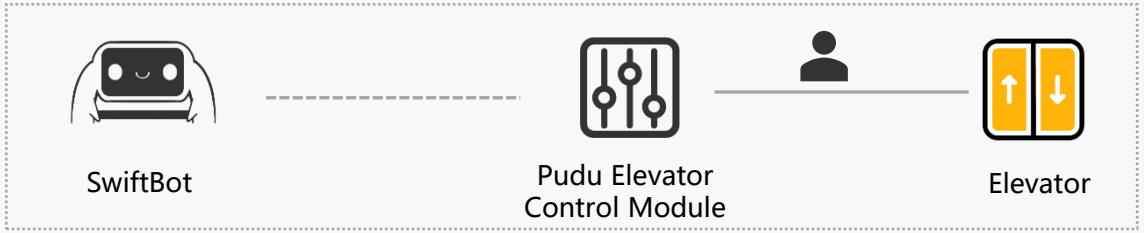
Autonomous Elevator-riding

By adopting the PUDU Smart IOT platform, SwiftBot is capable of automatically calling and entering the elevator, then selecting the target floor and leaving when it arrives. The whole system completes the autonomous elevator-taking process by simulating human behavior without human intervention.

Autonomous Elevator-riding

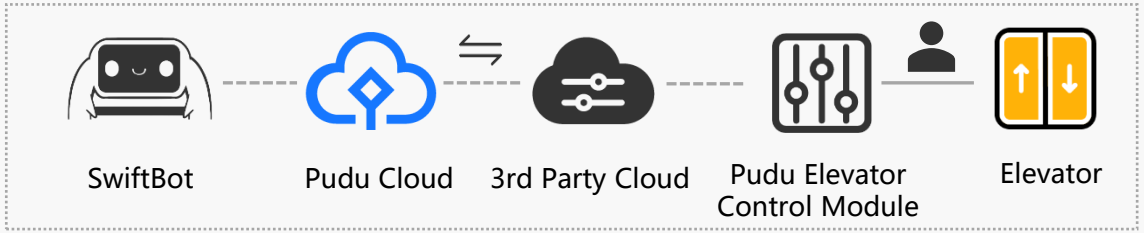
Solution 1 Elevator Retrofit

Install and deploy PUDU Elevator Control Module



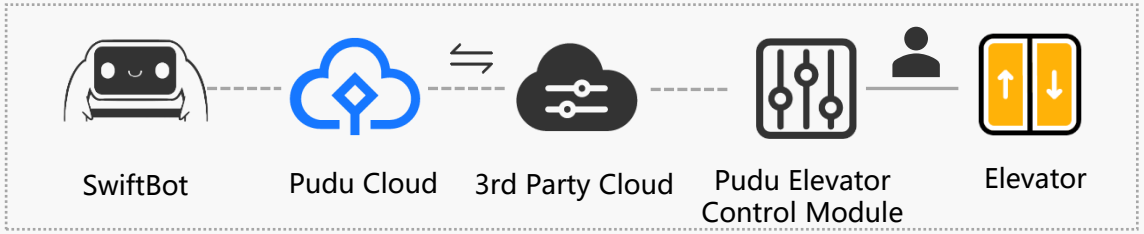
Solution 2 Manufacturer Open API

Elevator manufacturers will retrofit the elevators if needed and provide API for PUDU to integrate to management system



Solution 3 PUDU Open API

PUDU will provide API for customers to develop and implement the solution



Automatic Charging

SwiftBot automatically provides a voice alert and UI notification when the battery is low. Without manual intervention, SwiftBot can go to the charging pile to refuel itself when the battery level is lower than the set threshold.

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Efficient

- Omni-directional Perception
- Intelligent Waiting
- Multi-table Delivery
- Initiative Make-way
- Autonomous Path-planning
- Mission at-1-call
- Automatic Charging

Safe and Secure

- Automatic Electric Door
- Stabilized Delivery Mode
- Special Group Detection Algorithm
- Real-time Path Projection
- Initiative Make-way for Pedestrian

Great Applicability

- Multiple Serving Modes
- Function-extendable
- 3rd Party Integration
- Pudu Cloud Platform

5-S Delivery Expert

50%

Swift

Reduce 50% human-robot road congestion and increase 30% machine running speed in restaurant environment

20%

Stable

Enhance 20% delivery stability powered by hybrid technology, combining Auto-level adaptive variable suspension and stabilization algorithm

Safe

Human detection technology of securing safety for special group such as elders and children

Smart

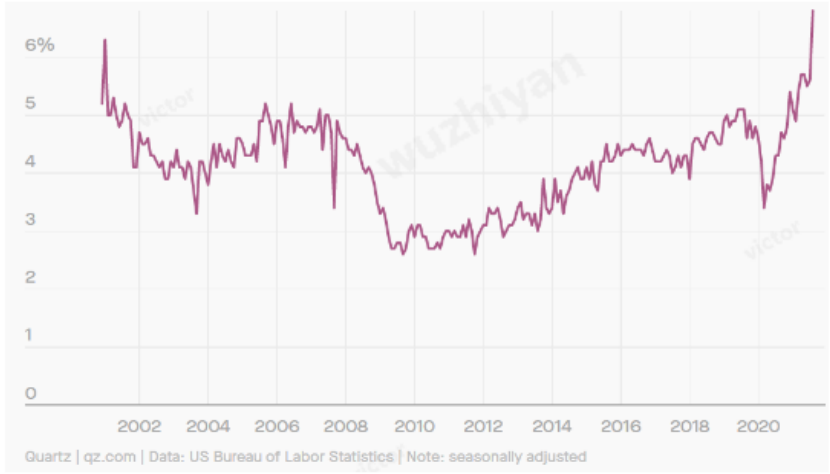
Multimodal interaction provides more intelligent and better experience for customers

Sociable

Being courteous and friendly, SwiftBot redefines the relationship between people & robots

Enhance Work Experience and Staff Satisfaction

Mitigate
the recruitment pressure



In 2021, the shortage rate of the global food services is 14.39% meanwhile the quit rate is up to 7% .

The pandemic has been hugely devastative to the labor market and fundamentally altered the industries and locations where would-be employees want to work. Employers are struggling in looking for and retaining qualified staffs.

Deploying robots to replace the 4-D jobs (Dull, Duplicate, Dirty and Dangerous) is trendy and will become ubiquitous in future. With the help of robots, employees may focus more on the high-value work and have a better work environment, which results in better work experience and satisfaction.

Contactless Delivery, Safety Means Everything

SwiftBot supports pager function, traces the target following the voice directions, and receives remote operation commands. In different use scenarios, SwiftBot can receive demands from the pagers and collects the dishes or items automatically, requiring no manual operation or intervention, reducing contagion risk between people and boosting work efficiency.

Unimpeded In-building Delivery

With the ability of automatic passage in the building, SwiftBot can shuttle in elevators, e-gates and electric door freely. The lockable, large capacity cabin enables safe and efficient item delivery between floors.

Greater Brand Exposure

By creating your one-of-a-kind SwiftBot

Pudu offers customized appearance and voice messages services to make your robots unique and eye-catching by combining brand logo or culture elements.

Customized Voice

Multiple Scenarios Coverage

With the fusion of positioning, navigating and sensing technology, SwiftBot can be widely used in different commercial scenarios, such as restaurants, café, hospitals, hotels, office buildings etc.

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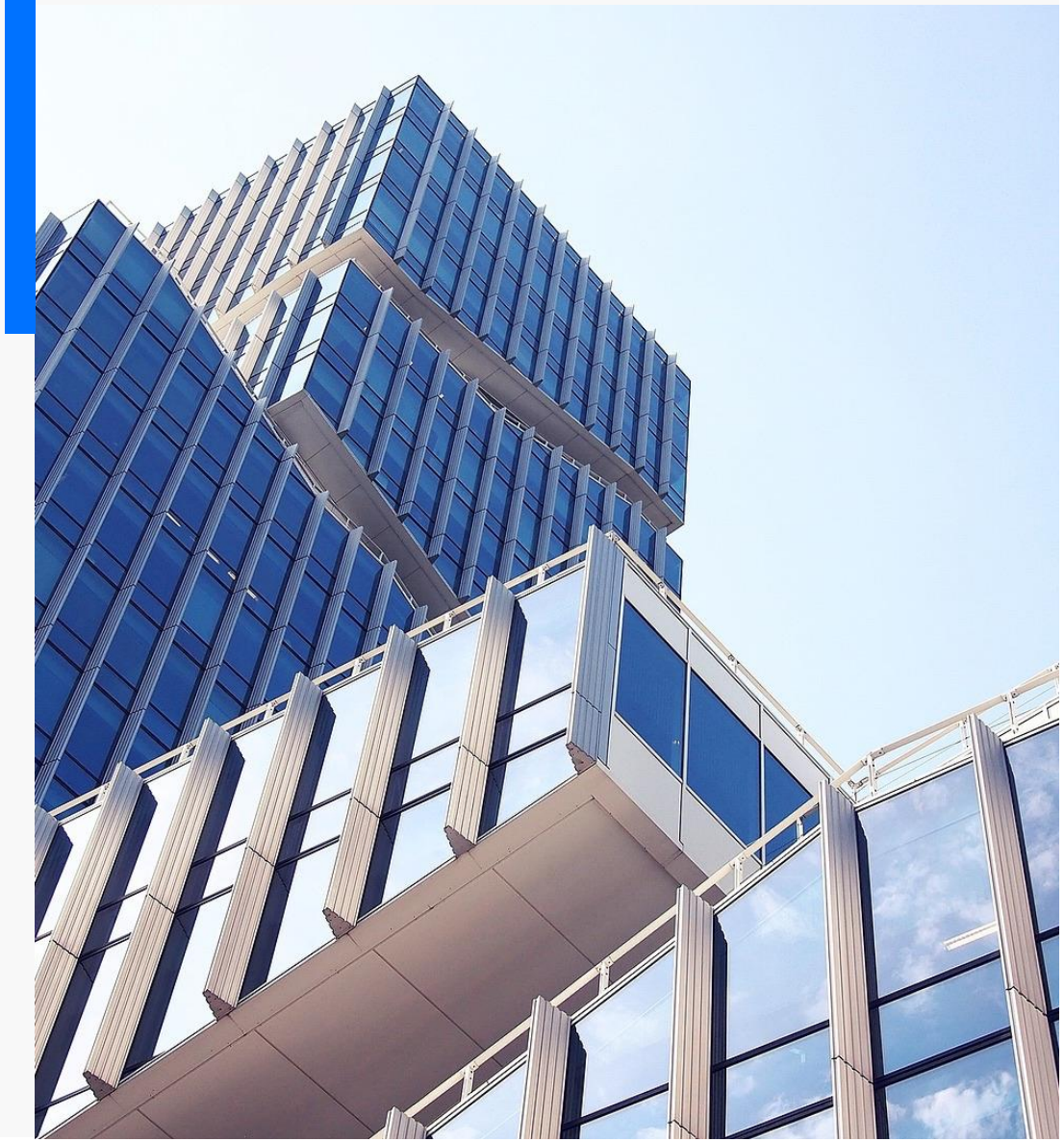
Pudu Robotics

Shenzhen-based and founded in 2016, Pudu Robotics is a world-leading tech-focused enterprise dedicated to the design, R&D, production and sales of commercial service robots on a mission to use robots to improve the efficiency of human production and living.

Since its inception, Pudu Robotics has heavily invested in R&D, obtained multiple awards such as Red Dot and applied hundreds of core patents to lead the development of the robotics category and provide high technology products that would appeal to targeted markets. Pudu Robotics has been rapidly growing in recent years to become a "leader" in the global markets with coverage of over 60 countries and regions worldwide. The robots are widely applied in restaurants, hospitals, schools, office buildings, government halls, subway stations, waiting rooms, etc.



Milestone

2016

Jan.: Shenzhen-based

Founded in 2016

Completed angel round financing

2017

Mar.: Released First Delivery Product – PuduBot

Jul.: Won Red Dot Award – The Best of the Best

2018

Jun.: Series A Financing: Raised $8 Million

Nov.: Approved as a National High-tech Corporate

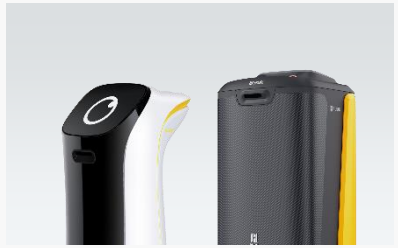
2019

Jun.: Global Strategic Cooperation – Haidilao Hotpot
Sept.: Strategic Cooperation – Xiabu Xiabu
Dec.: Released Multi-featured Products – BellaBot & HolaBot

2020

Jan.: Awarded CES Technology Innovation Award
Feb.: Contributed to Hundreds of Hospitals during COVID-19 Outbreak
Jul.: Series B Financing: Raised over $15 Million by Meituan
Aug.: Series B+ Financing: Raised $15 Million by Sequoia China Investment Management LLP
Dec.: Launched Disinfection Robot – Puductor 2

2021



Mar.: Sub-branch R&D Center Set-up
Mar.: Launched New Products - KettyBot & FlashBot
May: Series C1 Financing: Raised $78 Million by Tencent, Meituan and Sequoia China Investment Management LLP
Sept.: Strategic Cooperation - Panasonic
Sept.: Series C2 Financing: Raised $77 Million by Meituan, Greater Bay Area Homeland Investments Limited, Shenzhen Investment Holdings Co., Ltd., Sequoia China Investment Management LLP
Oct.: Won G-mark – Good Design Award

2022

May: Released New Delivery Product - SwiftBot
Jun.: Released New Cleaning Product - PUDU CC1
Jul.: Released New Delivery Product - PuduBot 2
Dec.: 56,000+ units have been sold worldwide

Culture

Mission

Use robots to improve the efficiency of human production and living

Vision

To become the world’ s strongest commercial service robot company

BE INVENTIVE

BE CUSTOMER CENTRIC

THINGKING IN THE LIGHT OF FIRST PRINCIPLES

BE ENTERPRISING & ACCOUNTABLE

PURSUING FOR THE ULTIMATE

MOVING FAST

BE OPEN-UP

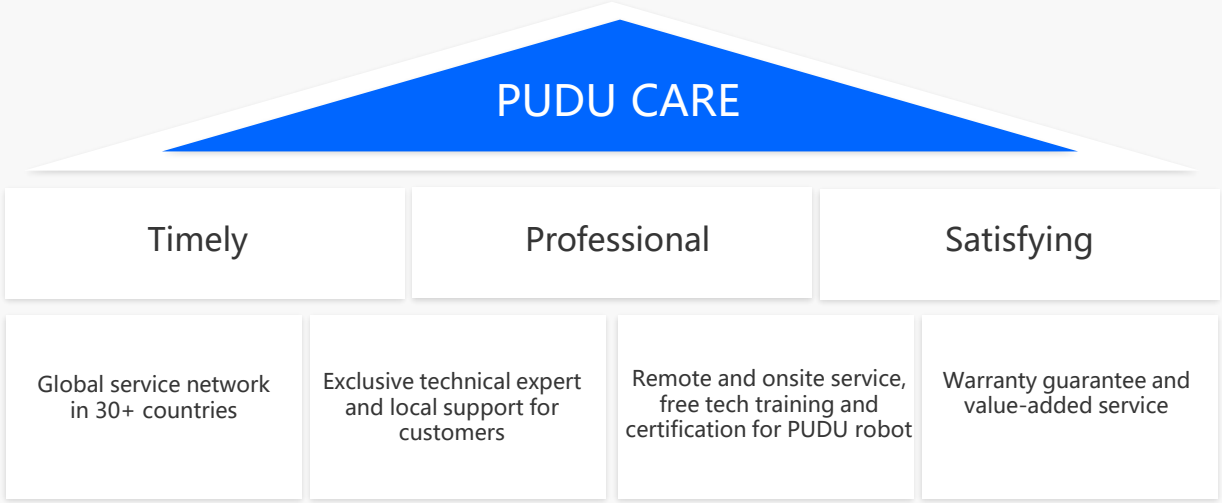
EMBRACING CHANGE

Operation Advantage

Offline Service:

- 1 Year Free Warranty
- 7 × 24 Hours Service
- Local Service & Support

Pudu Robotics has a thorough after-sales support system and humanized after-sales policy as well, whenever it is needed, we are going all out to offer service and reach your satisfaction.



Certificate & Patent

All of existing products have passed the multi-certification that match the targeting markets.

Pudu Robotics has applied for about 1300* core patents, of which invention patents are over 60%, involving positioning, navigation, motion control, human-computer interaction, robotics arm, servo motor, computer vision, cloud platform and other technical fields.

* Relevant statistics as of December 2022

Honor

Pudu Robotics has been recognized by organizations and institutions in various industries.

PUDU

Thank you!

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