



# BellaBot

Premium Delivery Robot



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## Premium Delivery Robot

BellaBot, a premium delivery robot, is designed by Pudu for the pursuit of quality service. It inherits the outstanding characteristics of the previous generation while being endowed with superior human-Robot interaction capabilities. Featuring an innovative bionic design language, lovely modeling, multi-modal interaction, and many other new functions. BellaBot provides users with an unprecedented food delivery robot experience.





# Product Overview · BellaBot

## 3D Obstacle Avoidance Sensor

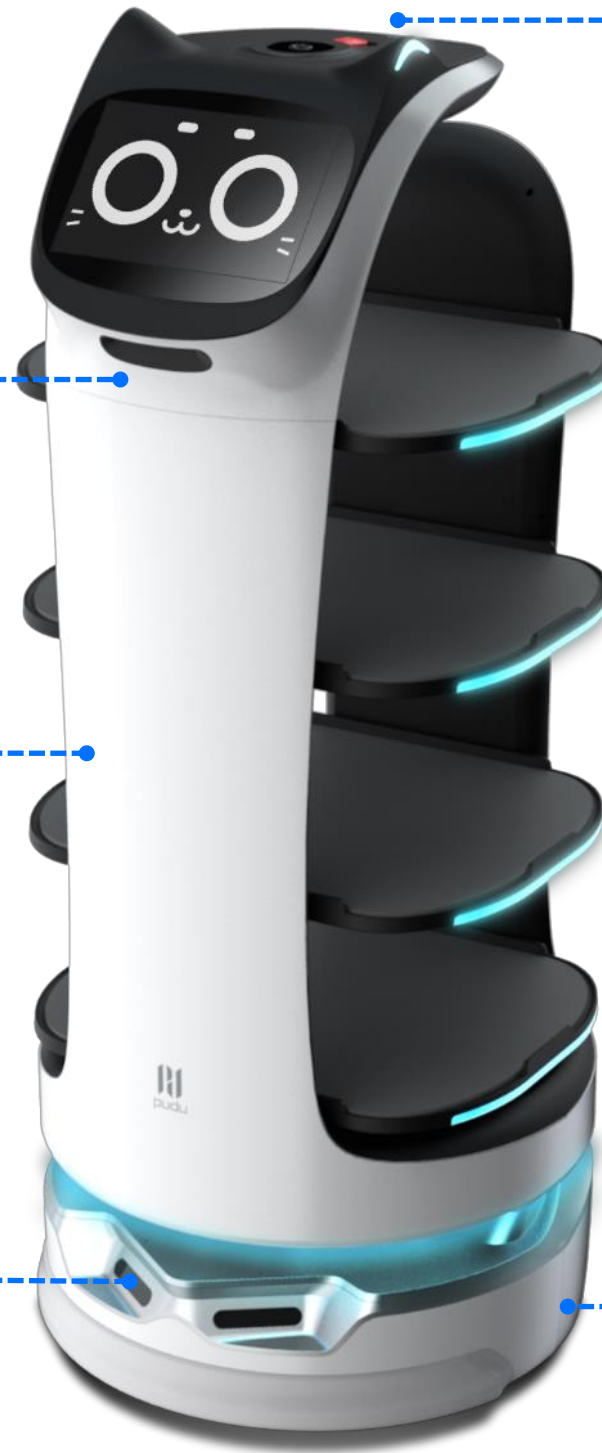
The RGBD on BellaBot's neck and two sets of cameras on its chassis provide BellaBot with 3D perception.

## ABS Industrial Plastic & Aviation Grade Al-Alloy

Structurally stable, oxidation-resistant, and corrosion-resistant.

## Latest Lidar

Customized lidar with more accurate detection.



## Visual Camera

The infrared camera on top of BellaBot provides real-time V-SLAM positioning and navigation.

## Infrared Induction Tray

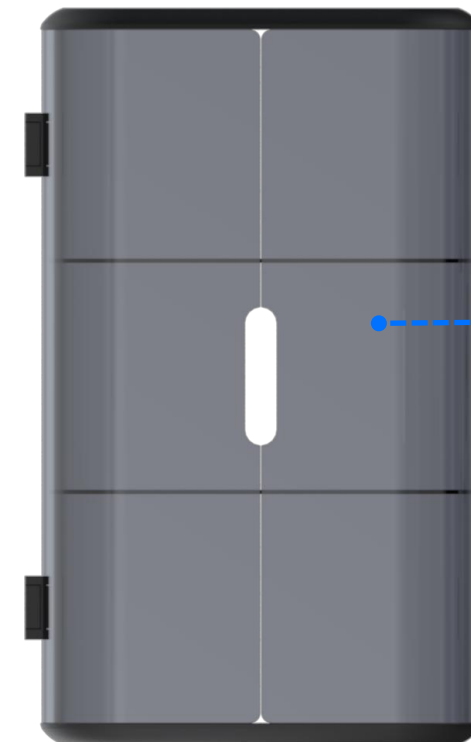
4\* induction trays that intelligently perceive the tray's load, and ensure higher efficiency of distribution.

## Dish cover (Accessory)

Enclosed dish cover with 3 layers of large space, magnetic door-opening method. Contactless delivery, safer service.

## Independent Suspension

Auto-level independent linkage suspension system with high-efficiency on bump avoidance.



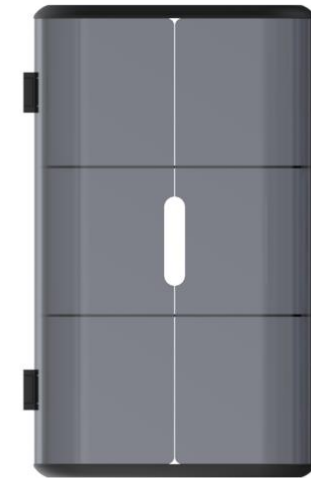
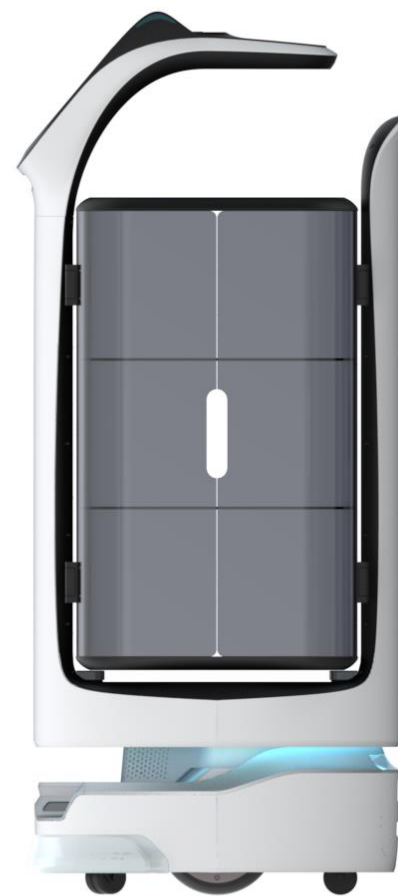


# Product Overview · BellaBot

Category	Specifications	Description
<b>Exterior and Performance</b>	Machine dimension	<ul style="list-style-type: none"><li>• 565*537*1290 mm</li></ul>
	Tray size	<ul style="list-style-type: none"><li>• Tray size 410mm*500mm</li><li>• Loading dimension: 385mm*480mm</li></ul>
	Num. of trays	<ul style="list-style-type: none"><li>• 4-layer tray, with a height of 230/200/200/180mm from top to bottom</li></ul>
	Robot weight	<ul style="list-style-type: none"><li>• 55kg</li></ul>
	Load capacity	<ul style="list-style-type: none"><li>• Max 40kg, 10kg/layer</li></ul>
<b>Power Adapter and Battery</b>	Battery capacity	<ul style="list-style-type: none"><li>• 25.2V/25.6Ah</li></ul>
	Quick-release battery	<ul style="list-style-type: none"><li>• Power exchange technology allows for easy removal and replacement of the battery to ensure BellaBot's continuous operation</li></ul>
	Battery Life	<ul style="list-style-type: none"><li>• 12-24H (Replaceable Battery)</li></ul>
	Charging time	<ul style="list-style-type: none"><li>• 4.5H</li></ul>
<b>Movement Functions</b>	Location positioning	<ul style="list-style-type: none"><li>• Support both Marker Positioning and Laser Positioning</li></ul>
	Perception	<ul style="list-style-type: none"><li>• Minimum size of object for obstacle avoidance: 35mm*50mm*100mm</li><li>• Minimum clearance: 0.7m</li></ul>
	Dispatching	<ul style="list-style-type: none"><li>• A maximum of 20 robots of the same version can be dispatched at the same time</li></ul>
	Safety	<ul style="list-style-type: none"><li>• Speed: 0.5-1.2m/s (Adjustable)</li><li>• Climbing angle: <math>\leq 5^\circ</math></li></ul>



## Dish Cover Specifications



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Cover material	Plexiglass / Ma-Al Alloy
Cover weight	16kg
Cover dimensions	514*420*677mm
Load capacity	3 trays, 10kg/tray
Door opening method	Magnetic Switch

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\* Accessory



## Intelligent Multifunctional Delivery

NEW

### Greeting Mode

BellaBot features a greeting mode in which it takes over reception and escorts guests to their table.

### Delivery Mode

BellaBot delivers food to multiple tables at once.

### Cruise Mode

BellaBot circulates along a predetermined path with self-service drinks and desserts and recommends them to customers by voice.

### Birthday Mode

BellaBot delivers birthday cake or gifts to customers, accompanied by customized background music.

### Dish-return Mode

BellaBot collects dishes to be cleaned and delivers them to the dish-return spot or the dish-washing room.

### Direct Mode

The robot performs one-way delivery.



## Why BellaBot is premium delivery robot?

### Intelligent Induction Tray



- Perceive the tray's load to ensure more efficient delivery.
- Modular structure for quick disassembly and easier cleanup.

### Multimodal Interaction



- Light interaction, touch feedback, and smart expression allow for unprecedented human-robot interaction.

### Power Exchange Technology



- Industry's first power exchange technology
- Enable to quickly replaced to keep the robot running around the clock.

### Intelligent Lattice Screen

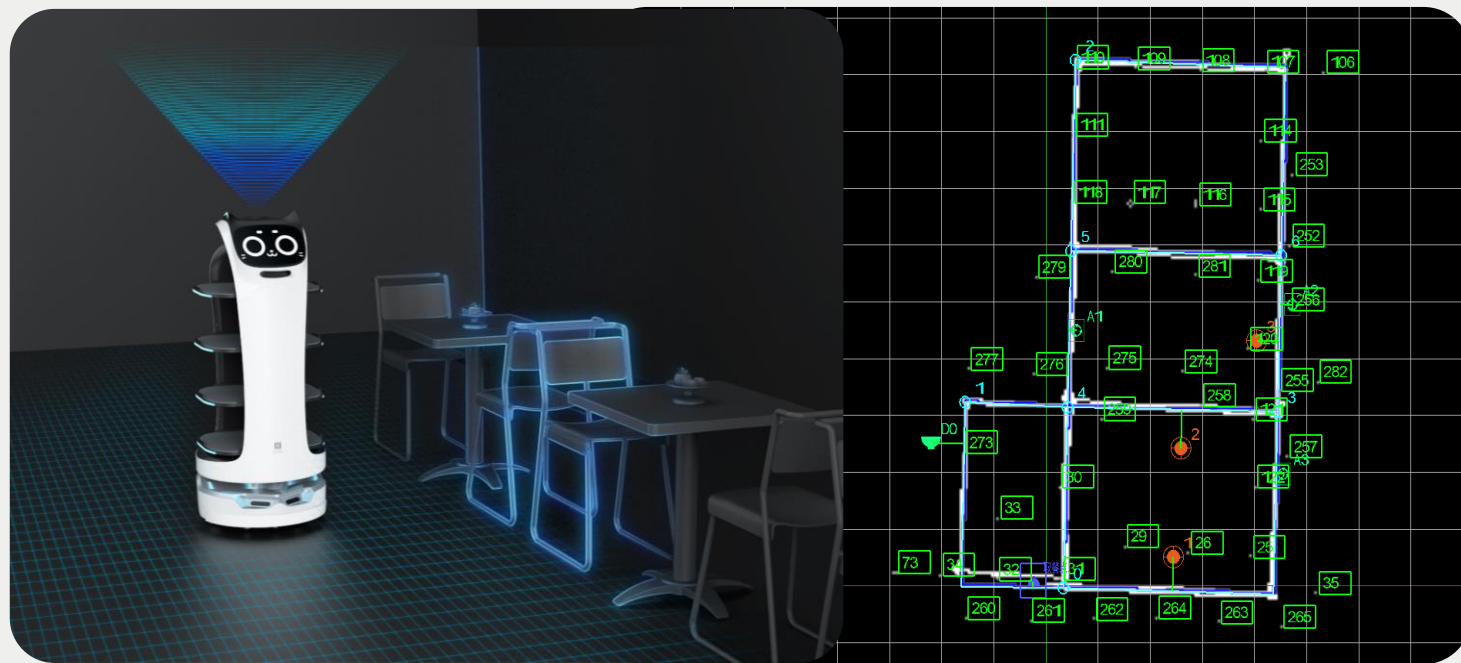


- A lattice screen on BellaBot's back
- Allowing to customize the table numbers, instructions, blessings, and other texts to customer needs.

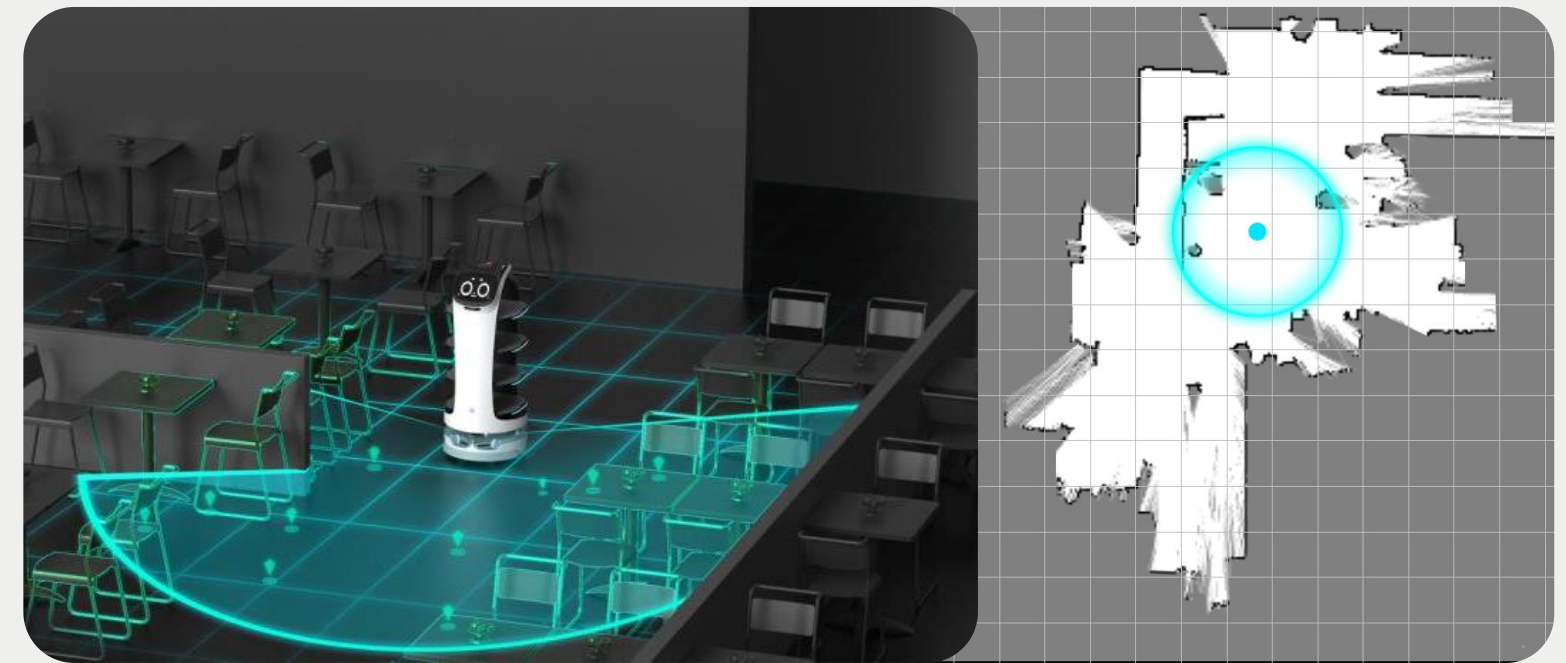


## Laser SLAM and Visual SLAM Dual Solution for Full Coverage in Any Scenario

- BellaBot supports two SLAM navigation solutions simultaneously in order to adapt to more scenarios, both of which are accurate and easy to use.
- Both positioning solutions which BellaBot provides the same excellent user experience. While the positioning solutions differ, BellaBot's customer-centered service never changes.



Visual SLAM



Laser SLAM





### Attentive Service with Multimodal Interaction



#### Touch Interaction

Unique touch interaction design, allowing special guests interaction with BellaBot by touching her ears and forehead.



#### Light Interaction

Different tasks trigger corresponding light interactions; BellaBot's ears and tail can display its running status in real-time.



#### Expression Interaction

Dozens of original expressions are specially designed for BellaBot to add warmth to her expressions.



## Product Features · High-sense & Obstacle Avoidance

### 3D obstacle avoidance technology to ensure safety



RGBD depth camera

3\* RGBD depth camera provide BellaBot with the strongest three-dimensional perception to date. It can accurately detect and stop when encountering obstacles with a response time as short as **0.5s**.

- Front detection angle up to **192.64°**
- Front obstacle detection range exceeding **10m**.
- Mini height for object detection is **2cm**.
- Obstacle scanning frequency as rapid as **5400 times/min**.

### 70cm minimum clearance navigate easily in the compact environments



Premier sensor featuring Pudu's SLAM algorithm, BellaBot has a minimum clearance of **70cm**.

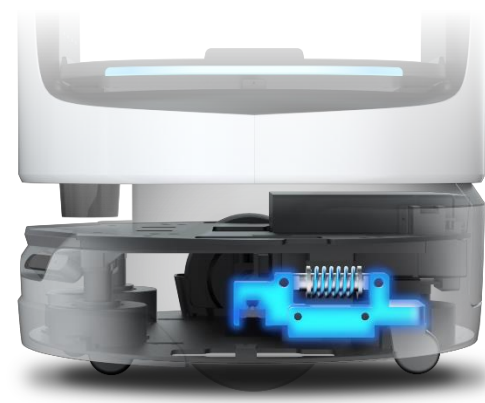
Meets **99%** of scenarios involving required space in passageways

Flexible and Efficient



## Product Features · Safe & Efficient

### Auto-level independent linkage suspension for stable



Auto-level adaptive variable suspension.

Damping can be altered based on various driving conditions.

Maintained at an optimal state

- Height over the obstacle: **1cm**.
- Driving stability has been improved by **50%**.

### Power Exchange Technology



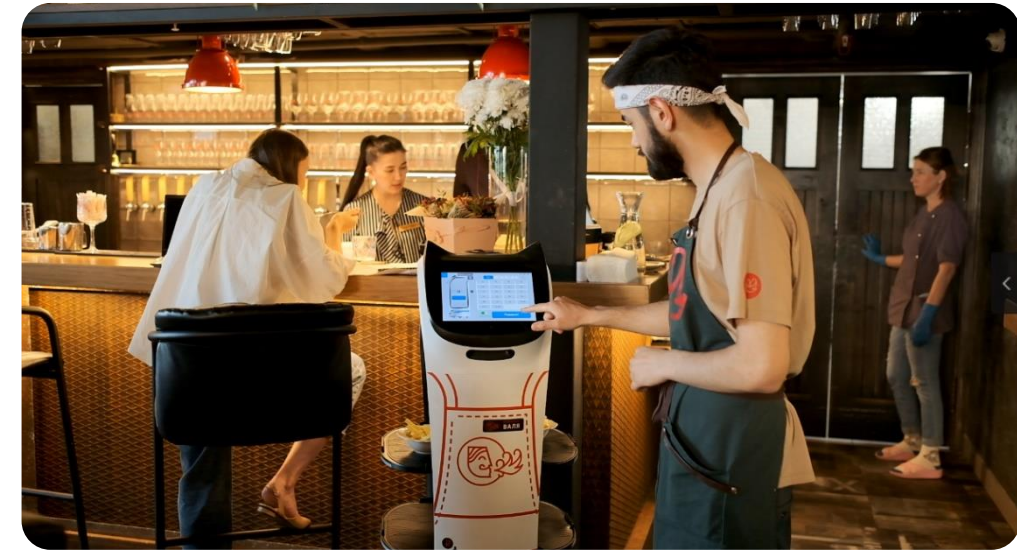
Charging and usage scenarios are categorized for faster battery replacement.

**24/7** operations!



### Enhancing Core Competitiveness with Differentiated Marketing

- The intelligent experiences enable customers and staffs to promote the restaurant online and offline voluntarily, which helps attract more potential customers and improve the restaurant's popularity as well as sales.
- The cute cat-like look immediately captures the eyes of customers, especially young people, and kids, attracting and leading them into the restaurant.



### Optimizing Management for Reduced Labor Costs

- PUDU CLOUD platform drives the digital transformation of restaurants, providing real-time insights into the restaurant's operation by the daily delivery data.
- BellaBot is ready to serve you 7x24x365, reducing staff management costs, making staff management easier than ever.
- With a loading capacity of 2.5 times of a human being, BellaBot can deliver food to two tables in one go, effectively reducing the staff' s pressure in peak time.



### Empowering Safe, Efficient, and Intelligent Customer Experience

- BellaBot provides greeting and escorting, and multimodal interaction, giving customers an intelligent experience like never before.
- The extra-large loading capacity ensures a shorter waiting time for customers and a high table turnover rate for restaurants.



### Allowing Waiters to Focus on Serving Customers Better

- BellaBot helps staff to do the tedious and repetitive work, allowing waiters to focus more on serving customers.
- More time and faster response, brought in a better customer experience, and ultimately higher customer satisfaction.



## All Scenarios Covered

Pudu has independently developed a robot positioning and navigation technology based on multi-sensor fusion. BellaBot provides two positioning and navigation solutions: visual SLAM and laser SLAM.

BellaBot can be used in restaurants, hotels, Bar, cafés, office buildings, and other business scenarios.



Restaurant



Bar



Cafés



Hospitals



Hotels



Government buildings



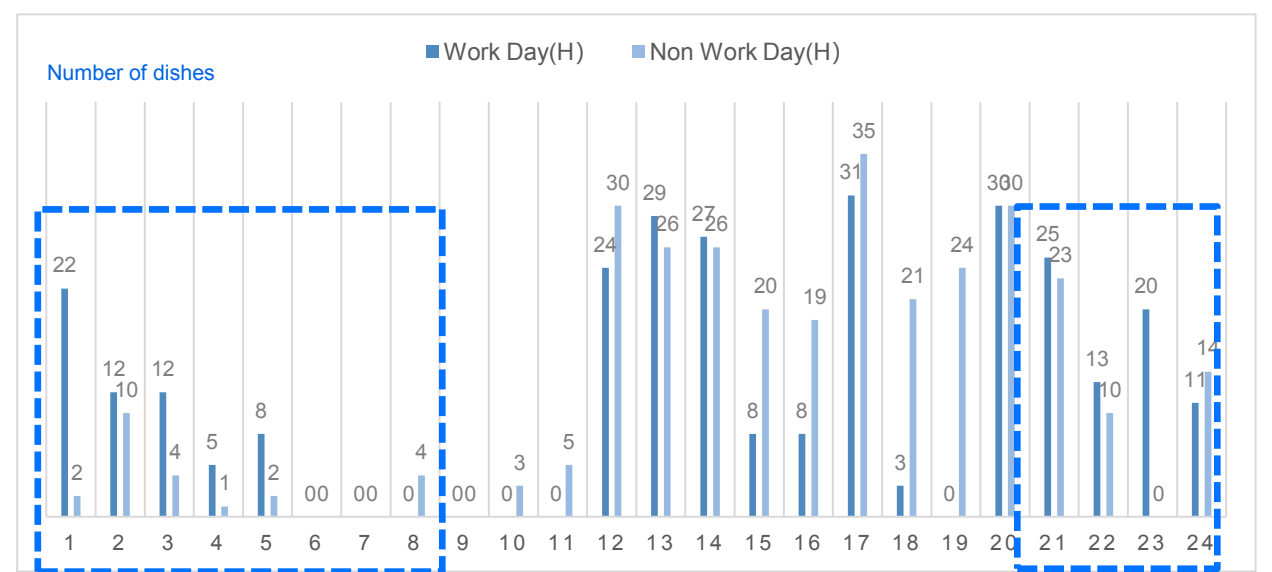
Office buildings



Shopping malls



## Client Case · Restaurant Cases



The robot can completely replace the waiting staff  
from 9:00 pm to 7:00 am.

### Robot usage data from a Haidilao restaurant in Shanghai

Number of tables: 60

Installation time: 1 day

Total floor area: 1000 m<sup>2</sup>

Dishes delivered: 240 times per day



### A restaurant in Russia

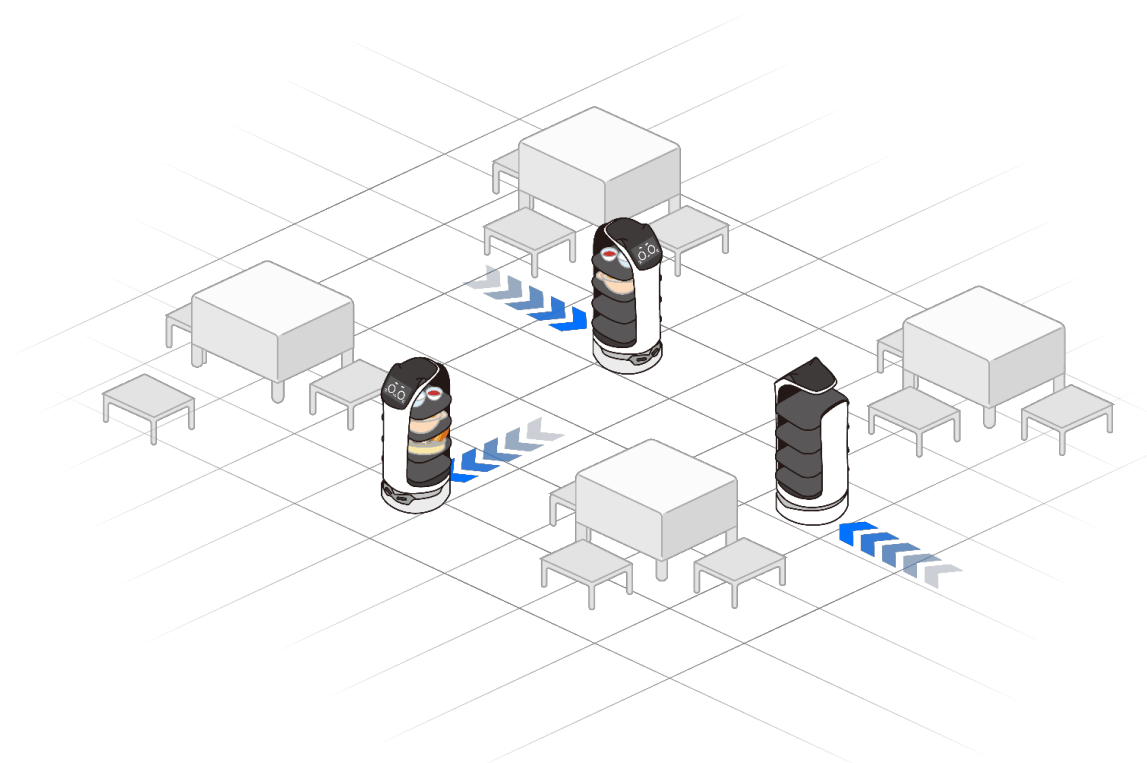
Number of robots: 1 BellaBot

Restaurant area: 200 m<sup>2</sup>

Number of deliveries: 198 times per day



# About Pudu · Core Technologies



## PUDU SCHEDULER

- Powerful ad hoc network
- Easy scheduling of up to 100 robots in the same working environment
- Flexibly adapted to dynamic environments
- From subway-level scheduling to road-level scheduling



## PUDU MIR

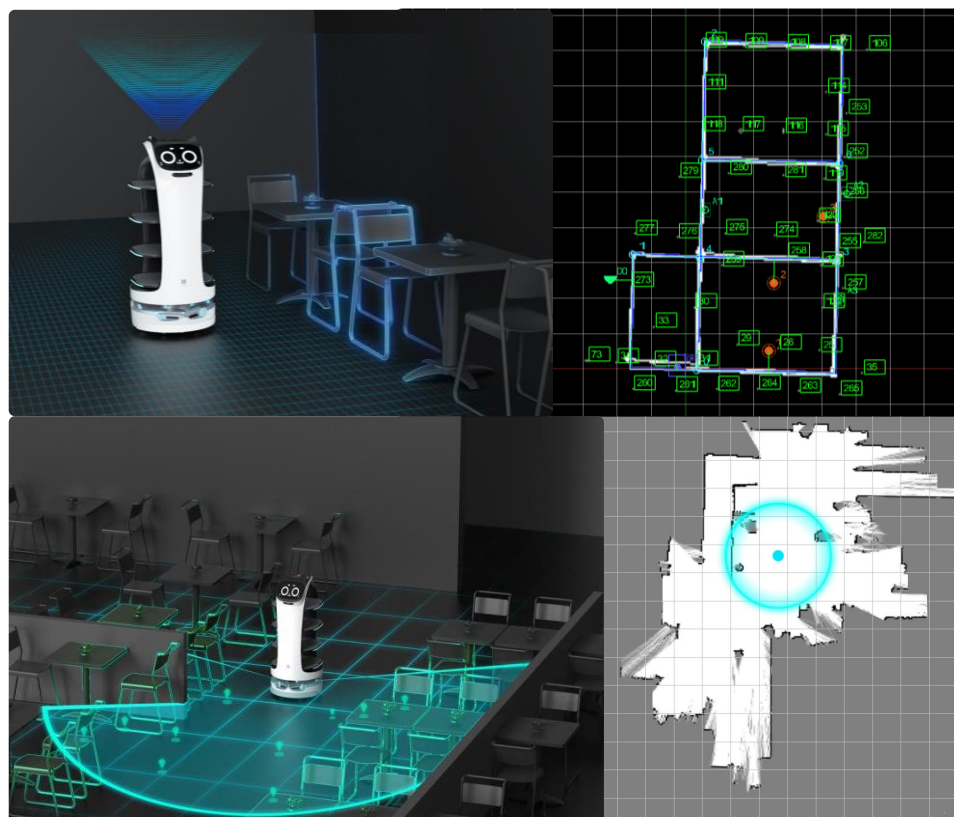
PUDU MIR is the world's first robot development platform designed to improve the efficiency in robot development.

More features can be unlocked through remote OTA software update.





## About Pudu · Core Technologies



### PUDU SLAM

PUDU SLAM is a new SLAM solution that integrates Lidar, Camera, RGBD, IMU, Encoder and other sensors.

The high positioning accuracy (10cm) allows the robot to effectively recognize and avoid 3D obstacles.



### PUDU CLOUD

- Cloud-based intelligent service platform
- Scenario data collection platform
- Automated operation and maintenance platform
- Business management platform

The delivery data of each robot is uploaded in real-time, enabling data-driven management of the restaurant.



## About Pudu · Safety Certifications

BellaBot robot has received KC certification from Korea, CE certification from the EU, FCC certification from USA, RCM certification from Australia, and NCC certification from Taiwan, China

IMDA certification from Singapore, MIC/TELEC certification from Japan, CR (China robot certification) and many other certifications both domestically and abroad to ensure the safety and compliance of our robots.



**INFOCOMM  
MEDIA  
DEVELOPMENT  
AUTHORITY**





## Create Your Exclusive BellaBot

### Customized Appearance



#### Enhanced Promotion

- Go harmony with the vibe of the restaurant
- Greater brand and service exposure

#### 3-day production

- Modular production (needs confirmation-design-launch) takes 3 days at the fastest

### Customized Voice Pack



Cute girls



Cute boys

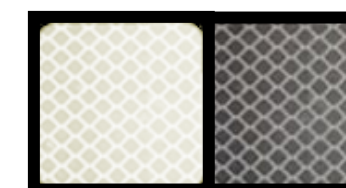


Sweet girls



Active boys

### Multicolor Marker



Notes: The colors are subject to the actual marker