



# PUDU ROBOTICS



Global Leading Robotics Company

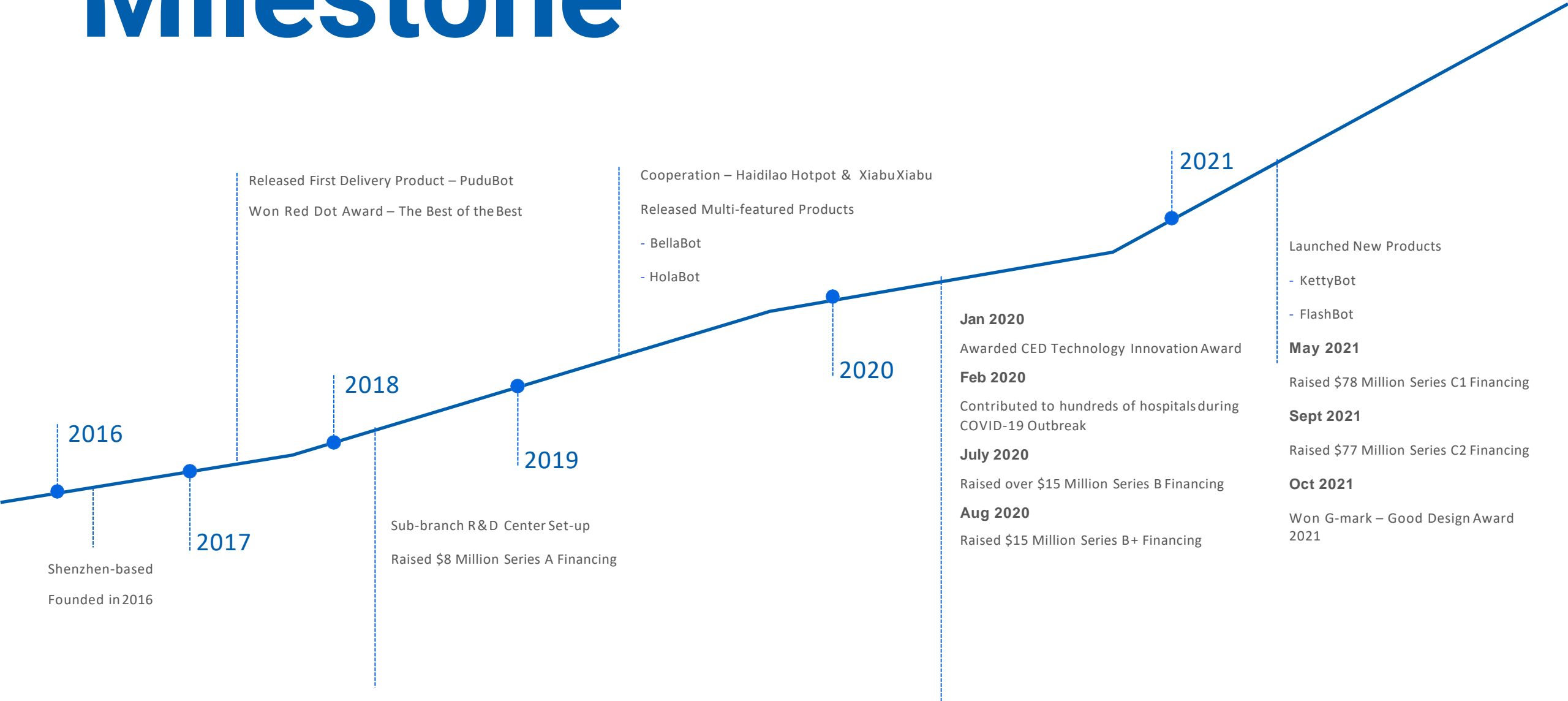
- Company Overview
- Product
- Reference
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- Brand Partner

# 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 worldwide. The robots are widely applied in restaurants, hospitals, schools, office buildings, government halls, subway stations, waiting rooms, etc.

# Milestone



# Sales Network

Pudu Robotics is exploring the global markets rapidly and currently with the coverage of over 60 countries and 600 cities worldwide. We are on the way to explore and deliver more to the future!



# Mission

Use robots to improve the efficiency of human production and living

To become the world's strongest commercial service robot company

# Vision

# Founder & CEO



- ✓ Hong Kong University of Science and Technology master, out-of-school suspension to start up business
- ✓ Artificial Intelligence and Robotics Expert
- ✓ Champion of Robocon China Robot Competition
- ✓ Own 60 robot invention patents

# Talent Team



**95%**

Bachelor's Degree

**70%**

Average Age Under 28

**60%**

Top Hi-tech Company

**50%**

R&D Team

# Culture



THINKING IN THE LIGHT  
OF FIRST PRINCIPLES



BE INVENTIVE



BE ENTERPRISING &  
ACCOUNTABLE



BE OPEN-UP



MOVING FAST



BE CUSTOMER  
CENTRIC



EMBRACING  
CHANGES



PURSUING FOR  
THE ULTIMATE





# Certificate

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



# Patent

Pudu Robotics has applied for hundreds of 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.

# KettyBot

Delivery & Reception  
Robot with an Ad Display

- Pass freely with 55cm left
- A walking AD display with 18.5" screen
- Easy to navigate without markers
- Work continuously for 8 hours





Superior Mobility



Customized Advertisement



Customer Attraction



Greeting & Escorting



AI Voice Interaction



Multiple Delivery Modes



Automatic Recharging



Automatic Task Setting

## 3D Obstacle Avoidance Sensor

Two sets of RGBD cameras on the neck and the chassis form a 3D obstacle avoidance

## 18.5" Large Ad Screen

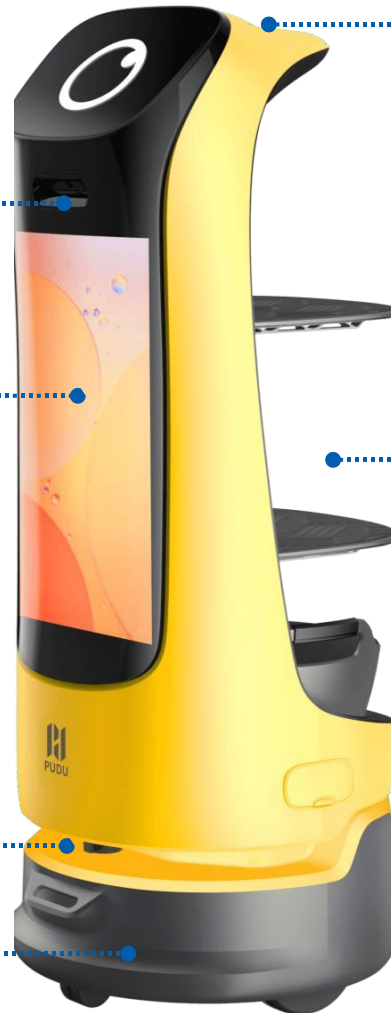
In-store marketing with a large ad display

## Laser Slam

Laser slam and visual slam dual solution

## Independent Suspension

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

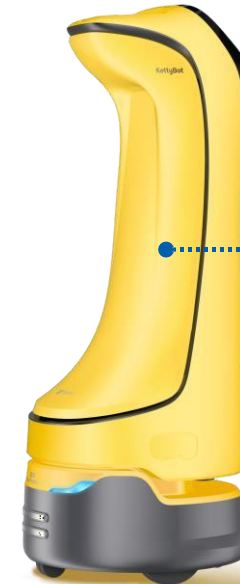


## Visual Camera

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

## Multi-functional Compartment

Two trays and a collecting box cooperate with each other to meet a variety of usage scenarios

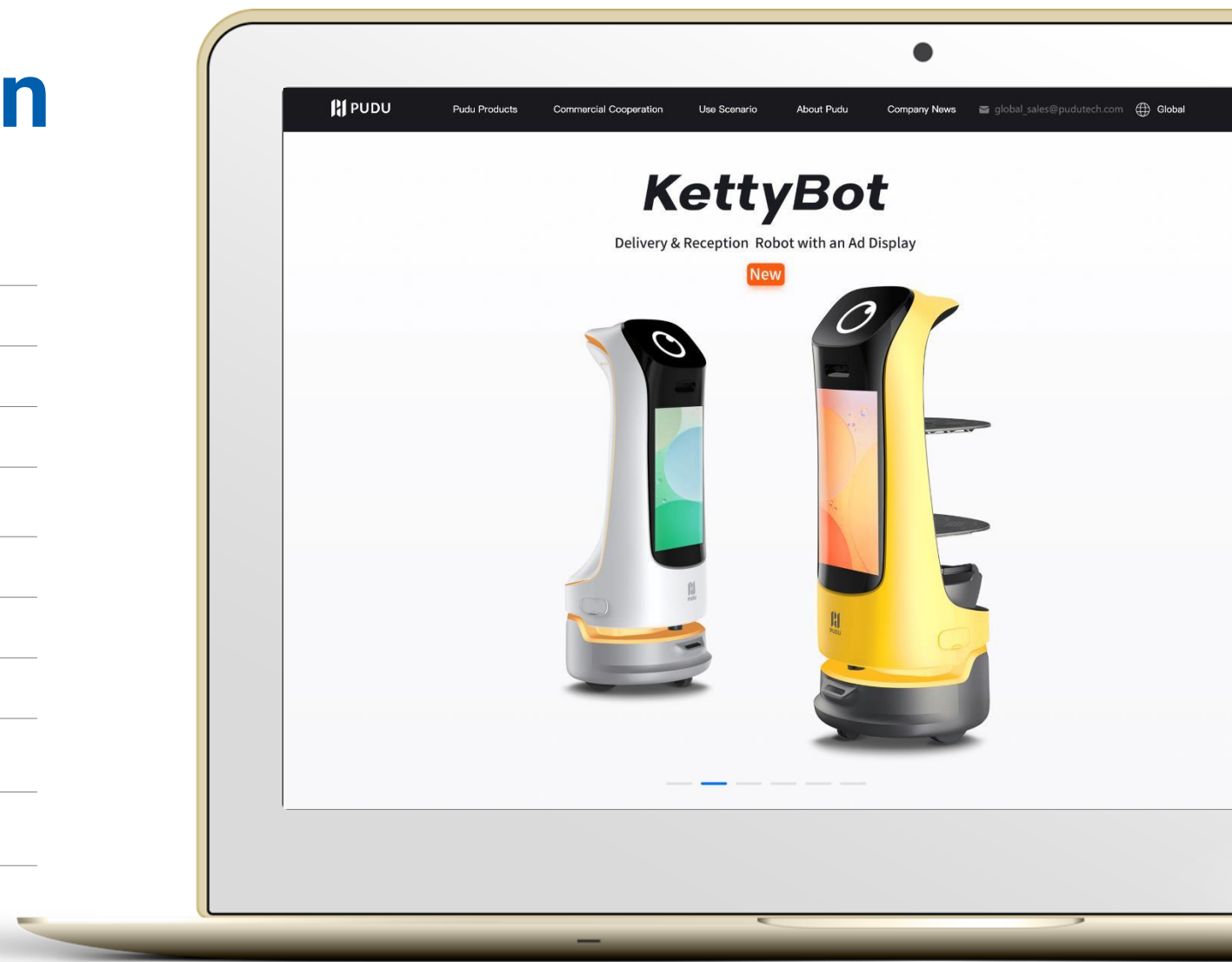


## The Removable Rear Cover

KettyBot features two forms enabled by the removable trays and rear cover

# Product Specification

Machine Dimension	435*450*1120mm
Machine Weight	38KG
Carrying Capacity	30KG
Battery Capacity	25.6Ah
Battery Life	>8h
Cruise Speed	Max 1.2m/s
Charging Time	4.5h (Automatic Recharging)
Obstacle Negotiation Height	Max 7mm
Crossing Width	≥55cm
Climb Angle	≤5°



# BellaBot

## Premium Delivery Robot

- Large capacity with 4-layer induction tray
- Interact with the robot by touching
- Replace battery anytime
- Easy to navigate without markers





### **Dual SLAM Navigation Technology**

Support both Marker Positioning and Laser Positioning



### **Interactive LED**

Intelligent light interaction technology



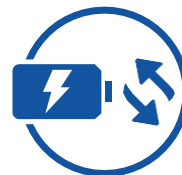
### **Vivid Expressions**

Cat-like expressions and features



### **Touch Interaction**

Respond differently to different touch



### **Exchangeable Battery**

Enables working in 7x24 hours



### **Sensor Tray**

Real-time delivery situation

### 3D Obstacle Avoidance Sensors

Comprised of the RGBD camera on BellaBot's neck and two sets of cameras on its chassis, which provide BellaBot with full-dimensional perception

### ABS Industrial Plastic/Aviation-Grade Aluminum Alloy

Structurally stable, oxidation-resistant, and corrosion-resistant

### All-New Lidar

Customized lidar with more accurate detection



### Visual Camera Positioning

The infrared camera on top of BellaBot provides real-time positioning in order to create a complete visual positioning solution

### Infrared Induction Tray

An originaive new induction tray which intelligently perceives the tray's load, and ensures higher efficiency of distribution

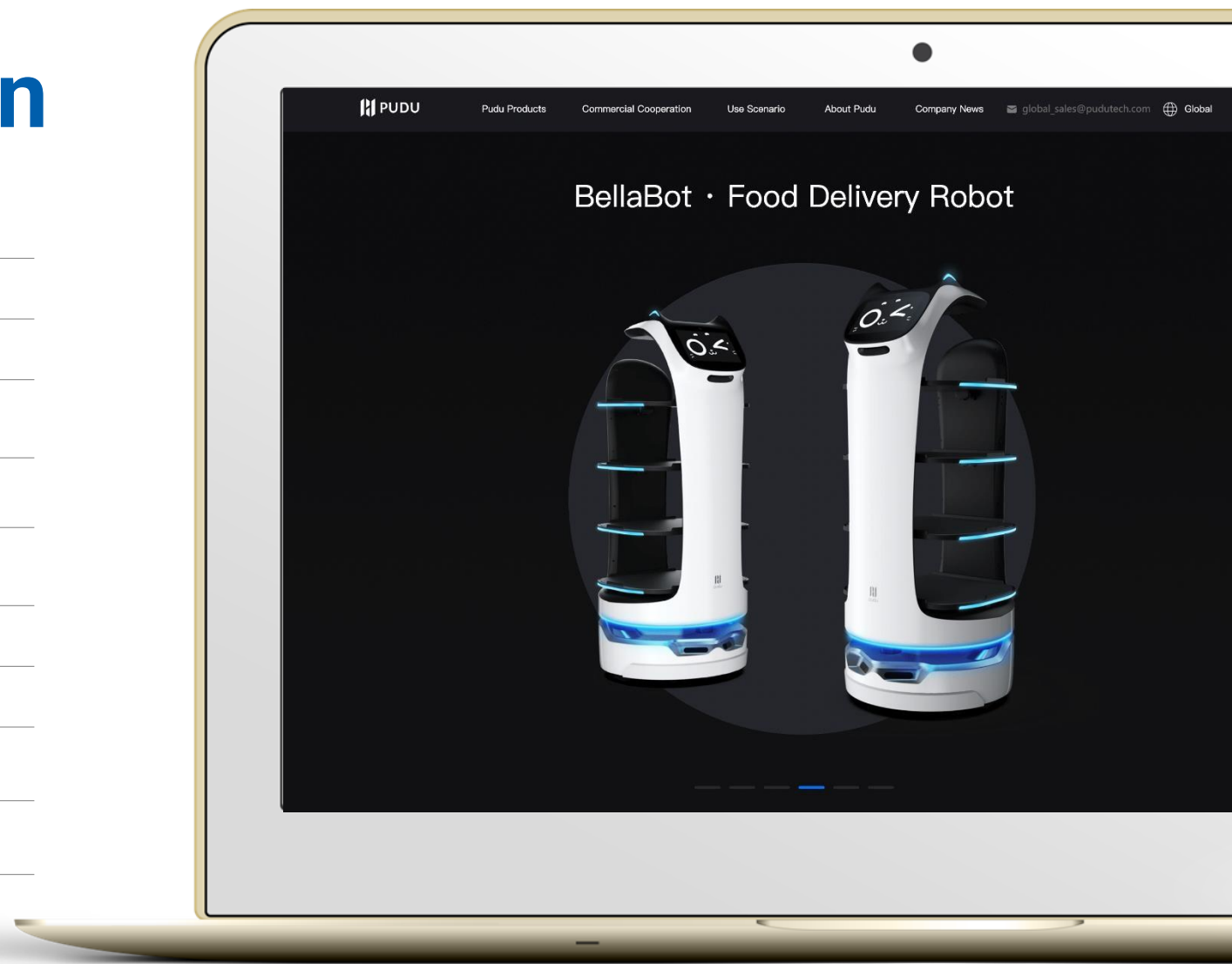
### All-New Independent Suspension

Auto-level independent linkage suspension system with high effectively to avoid bumps



# Product Specification

Machine Dimension	565*537*1290 mm
Machine Weight	55KG
Battery Capacity	25.2V/25.6Ah
Release Battery	The battery can be removed and replaced to ensure continuous work
Battery Life	12~24H (Replaceable Battery)
Location Positioning	Support both Marker Positioning and Laser Positioning
Charging Time	4.5h
Cruise Speed	0.5-1.2m/s (Adjustable)
Tray Load	10KG/Tray
Machine Material	ABS/Aviation-grade aluminum alloy



# HolaBot

Pager & Notifications Delivery Robot

- Greatly improve plates collection efficiency
- Large carrying capacity up to 60KG
- Easily controlled by a smartwatch
- Contactless and safe delivery



- ✓ 60KG large carrying capacity
- ✓ Paging function, giving orders in flexible position
- ✓ Air motion allows you to tell the robot to leave by simply waving your hand
- ✓ Voice recognition for a hands-free experience, and Omnidirectional six-mic array for the robot to locate sound source in real time
- ✓ Autonomous Navigation Planning, after the destination is set, the robot can plan an appropriate path by itself
- ✓ IPX5 waterproof inner cabin



## 3D Obstacle Avoidance Sensor

The RGBD camera at the neck part makes 3D obstacle avoidance acute

## All-aluminum Body

Aviation-grade aluminum alloy that is structurally stable, antioxidant and corrosion resistant

## Brand New Laser Radar

Customized laser radar with better detection accuracy



## Visual Camera Positioning

Top infrared camera for real-time positioning, set up the complete visual positioning solution

## 60KG Large Carrying Capacity

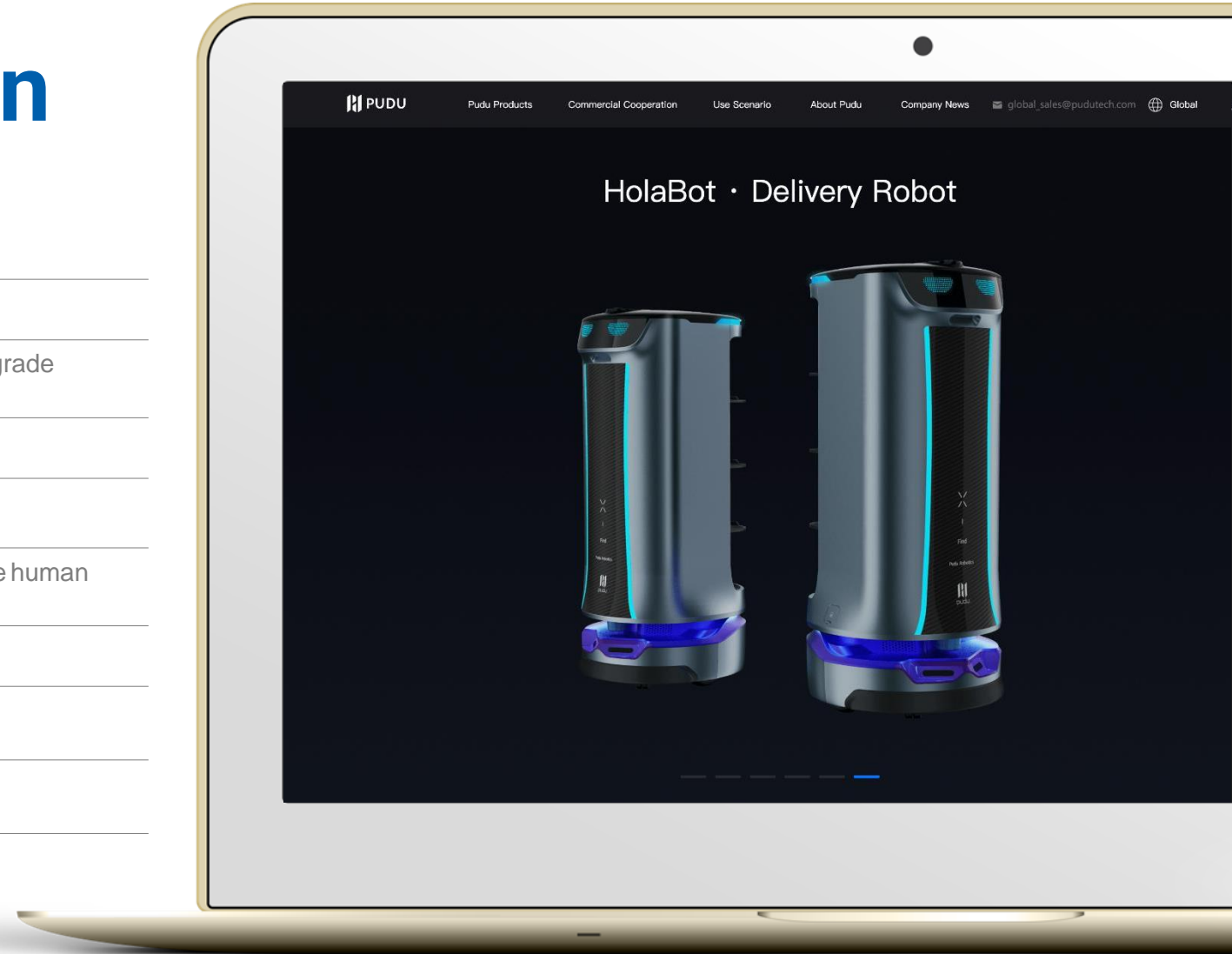
4 Tier loading zone, with adjustable trays level

## Auto-level Independent Linkage Suspension

Auto-level independent linkage suspension easily dealing with various of dump on the road

# Product Specification

Machine Dimension	541×531×1226 (mm)
Machine Weight	60KG
Machine Material	ABS engineering plastics/Aviation grade aluminium alloy
Charging Time	4.5H
Battery Life	10-24H (Replaceable Battery)
Battery Capacity	25.6Ah (Safe levels of current in the human body)
Cruise Speed	0.5-1.2m/s (Adjustable)
Load Capacity	13KG/Tray, Max 30KG
Capacity of Single Load Area	15KG/Tray (4 Trays)



# Software Advantages



PUDU SLAM



3D AVOIDANCE



PUDU SCHEDULER



THE LIQUID  
DISTRIBUTION



AI  
INTERACTION

# Hardware Advantage



## Linkage suspension

- ✓ Shock-absorbing design: easy to overcome obstacles
- ✓ Advanced servo motor drive and control algorithm: enable the robot to deliver liquid like soup and drink
- ✓ Newly strengthened motion control highly improved  
Kinesthetic Intelligence



## Lidar

- ✓ Life time: 50000 Hours
- ✓ Measurable frequency: 10000-18000Hz
- ✓ Scanning frequency: 5-12Hz
- ✓ Measurable radius: 0.12-25m
- ✓ Tailor-made to support strong sunlight
- ✓ Scanning angle: 360°
- ✓ Angle resolution ratio: 0.12-0.16°
- ✓ Overall dimension:  $\Phi 72 * 41\text{mm}$

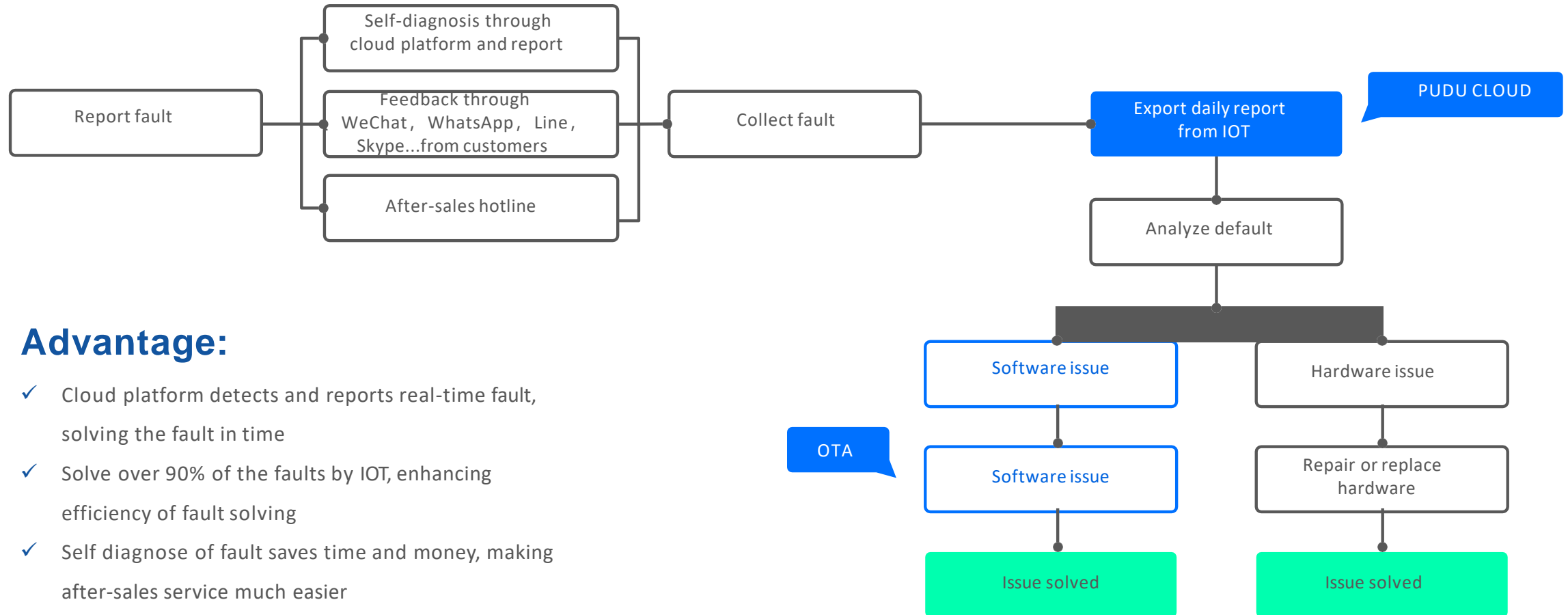


## Intel RGB-D sensor

- ✓ INTEL® REALSENSE™ Technology enables robot to turn in any angel
- ✓ Stop immediately when confronting obstacles
- ✓ Go directly after turning

# After Sales Service

Online Service: IoT (The Internet of things) solves more than 90% of technical problems



## Advantage:

- ✓ Cloud platform detects and reports real-time fault, solving the fault in time
- ✓ Solve over 90% of the faults by IOT, enhancing efficiency of fault solving
- ✓ Self diagnose of fault saves time and money, making after-sales service much easier



A faint, light blue world map is visible in the background of the entire page. The map shows the outlines of continents and countries.

# After Sales Service

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**Offline Service: 2 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.

# Pudu in Different Countries



Korea



Austria



USA



Thailand



Italy



Dubai



Belgium



Netherlands

# Usage Scenario



Restaurant



Shopping Mall



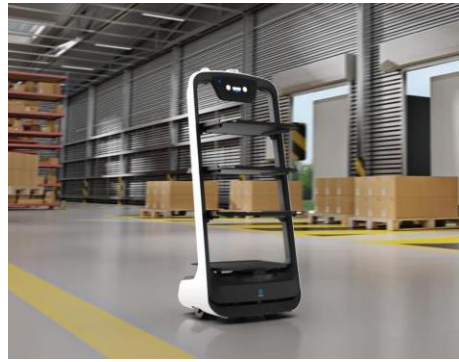
Hotel



Office



Hospital



Factory



School



Coffee Shop

# Responsibility

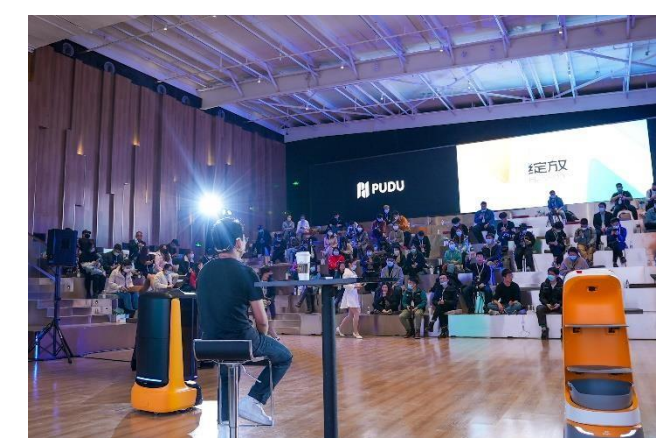
## Pudu in Combat against COVID-19

- ✓ Since 2020, Pudu Robotics has been supporting the fight against Covid-19 in China by providing hundreds of products to the hospitals and isolation spots.
- ✓ By using our robot to do delivery job, risk of infection among people is largely reduced. Our products got recognized and reported by mainstream media all over China.



# Events

We have attended lots of events and forums both in China and abroad (such as CES), through which we got bigger influence and better prestige.



# Honor



reddot award  
best of the best




# Media Coverage

**AP** Pudu Robotics' New Afra C1 Cleaning ... U.S. News World News Politics Sports

## CES 2022


Pudu Robotics, the global leader in commercial service robots, has enhanced its rich product portfolio with its new Afra C1 cleaning robot, which made its global debut on day one of CES 2022. The first international appearance of Afra C1 marks Pudu Robotics' official entry into the commercial cleaning robot market, as it seeks to explore applications of digital technology in hygiene and sanitation services.



**CGTN** Europe 02:20, 19-Nov-2021

## Could robots fill the UK's service industry staff shortages?

Catherine Drew in London



Robots have been waiting on diners in London and while they're a draw for futuristic foodies, they also have practical implications for the wider industry as the UK struggles with staffing shortages in the hospitality sector. BellaBot is the latest employee at the restaurant in Gravity Southside leisure center in the southwest of the capital. It's being trained to deliver food from the kitchen to the dining area, carrying orders the correct table. It's early days, but BellaBot and her two robot colleagues - FinnBot and OtisBot - are proving useful.

"If we've got a smaller workforce ... it's give us the opportunity to still run at maximum capacity by having the robots in place," Peter Webdale, operations manager at the site, told CGTN Europe.

**The Detroit News**

RESTAURANTS + BARS

## Madison Heights restaurant uses a robot to deliver food to tables

Melody Baetens  
The Detroit News

Published 12:51 p.m. ET Aug. 16, 2021 | Updated 9:29 a.m. ET Aug. 16, 2021

A Chinese noodle restaurant in Madison Heights may be the first in the area to employ the BellaBot, a robotic cart with a digital cartoon cat face that rolls food from the kitchen to the customers' tables.

Noodle Topia on John R is known for its house-made, hand-pulled noodle dishes, dumplings and Chinese tea drinks. The casual eatery has gained some non-human assistance in the form of BellaBot, which has four trays for carrying food (no arms) and has a precise




# Media Coverage

stuff ☰ life & style

## Robot waiter helps ease staff shortages in busy Northland restaurant

Denise Piper · 14:32, Jan 14 2022

[f](#)
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[r](#)
[e](#)
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stuff
0:10 / 1:08

DENISE PIPER/STUFF

Vikas Sharma, owner of Green's Thai Cuisine in Paihia, explains how the BellaBot is used in the restaurant to take pressure off busy staff.

Wait staff run off their feet this summer due to worker shortages are getting an extra hand of the non-human kind.

A robotic waiter, BellaBot, is helping by delivering meals from the kitchen to tables, then running dirty dishes back to the kitchen.

At Paihia restaurant Green's Thai Cuisine, the BellaBot means wait staff can spend an average of 11 to 12 minutes longer at each table, owner Vikas Sharma said.

Privacy Policy | Feedback f Follow 21.3M Tuesday, Jan 18th 2022 2PM 18°C 5PM 18°C 5-Day Forecast

# MailOnline

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This added an extra strain on the already short waiting staff, according to owners Paolo Hu and Peter Wu, who said the BellaBots had already proved popular with diners.

The guide price for the friendly-faced robots is \$20,000 (£14,500), which is less than the cost of employing a waiter at minimum wage for 40 hours per week.

Quirky footage shows Bella, who features a wide-eyed feline face, sweeping across the restaurant floor dishing out delicacies to delighted customers.

### Restaurant forced to use robot waiters to tackle staff shortages

Watch the full video



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⏸
🔊
0:00 / 1:03
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# Cooperation

# T H A N K S



 Pudu Robotics

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