

SPOTLIGHT

Ningbo's Embodied AI Robots Find Their Niche

By Jin Yuhan

As embodied AI moves into commercial use, Ningbo companies are proving that some of the biggest opportunities lie in highly specialized tasks. From factory production lines to public spaces, locally developed embodied AI robots are demonstrating how the technology is moving beyond prototypes and into real-world deployment.

Here's a look at several Ningbo-developed robots and the roles they are beginning to play in industry and everyday life.

Learning the Skills of a Master Tailor

My name is "Sewing Jack", and I was built in Ningbo. Every morning at 9 AM, I report for work inside the Embodied Intelligence Validation Center at Zhejiang Humanoid Robot Innovation Center in Haishu District. My daily routine is fairly straightforward: pick up fabric, align it, feed it into the machine, cut, and repeat.

For experienced tailors, these are skills honed over years on the factory floor. For me, they're the skills I was designed to learn.

The company that created me was established in Ningbo at the end of 2023 and officially began operations in March 2024. It is led by Professor Xiong Rong of Zhejiang University, who has spent nearly 26 years researching robotics.

Last September, my developers gave me a major upgrade—new hardware, new software and, as they like to say, a new "brain". I'm 1.8 meters tall, built to handle uneven terrain, and can walk at speeds of up to 9 km/h. My computing unit sits inside my torso, while my favorite feature is undoubtedly my hands. Weighing just 400 grams, they're equipped with tactile sensing technology and designed to perform up to 300,000 operating cycles.

I'm not the only robot on the training floor. Two NAVIAI i2 robots work nearby. One is older than me, a collaboration between the Center



The robot is in training. [Photo by Wang Jiabin and Feng Xuan]

and SUPCON Technology. The other one is younger; it spends its days tightening screws. Across from us is NAVIAI WAI, a laboratory robot that measures chemical reagents and performs testing with remarkable patience.

Although our jobs differ, we all share the same mission: industrial manufacturing. According to Professor Xiong's team, that's exactly why the center was established in Ningbo. The city's vast manufacturing sector provides a wide range of real industrial environments where robots like us can be trained, tested and improved.

Today, about 42% of the components used in me and my robotic coworkers come from suppliers in Ningbo.

Industry observers have dubbed 2025 the first year of embodied AI commercialization. While some robots have attracted attention with flashy demonstrations, my colleagues and I have been focused on something less glamorous: learning to do factory work.

We've already achieved operational precision of 0.03 millimeters and a 99.99% success rate on Huawei production lines. Our next assignment is even more challenging. At garment factories, we'll learn to separate layers of

fabric, smooth wrinkles and align materials—tasks that remain difficult for automated systems.

My training is almost complete. Soon, I'll graduate from the testing center and head to work full time. Around 2,000 robots like me are expected to be deployed at factories in Taizhou.

The Robot That Never Leaves the Pool

I'm a pool cleaning robot. Unlike human workers, I don't need to surface for air or take breaks. Once I enter the water, I can keep working around the clock.

My creators at Ningbo Wancheng Intelligent Technology Co., Ltd. have always had a clear philosophy: forget flashy demonstrations—focus on real underwater environments and solve real problems.

That means my job description is simple: clean better. The team has spent years improving the abilities that matter most in a pool: suction power, waterproof sealing, cable management, wall-climbing capability and cleaning efficiency. I can collect underwater debris, pump water automatically, filter surface contaminants and even support water-feature functions.

The approach appears to be paying off. In the first half of this year, my sales already exceeded the total for all of last year, with growing demand from both Chinese and international markets.

Before robots like me entered the scene, the high-end pool cleaning market was largely dominated by overseas brands, often with hefty price tags. The team at Wancheng decided there was room for a Chinese alternative—one that could offer stronger performance and better value.

The journey was far from easy. It took three to four years of development and more than 10 million yuan before I became ready for the market. Engineers repeatedly refined my structure, materials, sealing systems and functions through countless rounds of testing.

My earliest version had a useful skill: climbing ceramic tile walls. But it struggled when it encountered smoother surfaces such as glass. So the engineers went back to the drawing board. They arrived at an outdoor test pool early every morning, adjusting my weight distribution and propulsion system again and again. More than a dozen chassis designs were tested and discarded

ed before the team settled on a front- and-rear differentiated wheel structure that improved my mobility.

The upgrades continued. After redesigning my materials and running durability tests for three years, my improved rubber components can remain stable without deformation, allowing me to climb vertical cement, acrylic and glass surfaces at a 90-degree angle.

Then came another challenge: tangled cables. The team spent another three years developing a 360-degree underwater anti-tangle swivel joint, a core technology designed to keep me moving freely even in complex underwater environments.

This week, a major US customer visited our factory for an in-person evaluation. After examining my performance, the company expressed strong interest and is expected to place large orders.

You might think pool cleaning is a niche business. In reality, it is a sizeable global market. The worldwide swimming pool market is valued at more than 10 billion yuan, growing at an annual rate of about 17 percent. My job may be humble, but the market I serve is anything but small.

Ningbo Culture Finds a New Platform in Overseas Warehouses

By Jin Lu

A small cultural display is helping connect overseas employees and business partners with Ningbo, turning company warehouses abroad into unexpected spaces for cultural exchange.

Ningbo-based cross-border e-commerce company Hooya Group has recently set up cultural hubs at its overseas warehouses in Poland, Germany and the United States. The compact exhibition areas showcase the city's heritage, allowing employees and visiting partners to learn more about Ningbo.

The displays feature a range of Ningbo-themed items, including traditional handicraft fans, intangible cultural heritage merchandise, city guidebooks, scenic postcards, landmark-themed puzzles and decorative objects.

Founded in Ningbo, Hooya Group now operates 22 overseas warehouses covering more than 600,000 square meters, with a workforce of over 500 employees across Europe and North America. The company views its overseas warehouses not only as logistics hubs, but also as platforms for cultural exchange.

According to warehouse managers, the cultural hubs have helped strengthen employees' connection with Ningbo while encouraging overseas colleagues to learn more about Chinese culture. They have also created new opportunities for business interactions.

At one warehouse in Poland, a client noticed a postcard featuring Ningbo and began discussing the city before a product inspection. The conversation helped build familiarity and trust, making subsequent business discussions more productive.

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"Hi Craft" Debuts in Malaysia, Sparking Interest in Ningbo Culture

By Zhao Yu

A cultural hub showcasing Ningbo's heritage and coastal identity has opened at the Malaysia site of Ningbo Kaite Environmental Protection Technology Co., Ltd., giving local employees a closer look at the Chinese port city's history and culture.

The "Hi Craft" exhibition features a range of displays, including traditional fan-inspired crafts, historic images of Ningbo's old city, and photographs highlighting the city's port development. The displays

drew interest from employees, many of whom stopped to take a closer look and capture photos.

A grass-woven fan, a traditional Ningbo handicraft, became one of the most popular displays. Malaysian employee Amzar spent time examining the item and learning about its cultural background.

Having previously visited only Guangdong province, Amzar had never been to Ningbo. Through the exhibition's images and descriptions, he gained his first impression of the city—a coastal hub

shaped by its maritime heritage and port economy.

"So this is Ningbo: such a beautiful port city. After seeing this exhibition, I really hope to visit Ningbo in person and experience it for myself," he said.

For another employee, Annie, the "Hi Craft" display provides an easy way to learn about Ningbo and China without leaving the workplace. She said the displays had sparked her interest in visiting Ningbo in the future and experiencing the city's traditions and modern development firsthand.

The exhibition was orga-

nized by Kaite, a company specializing in the research, development and manufacturing of exhaust system components, catalytic converters and mufflers. Its core management and R&D team have over a decade of industry experience. The company has operated in Malaysia for more than three years.

According to company head Rong Yongbo, many local employees had limited knowledge of China before the exhibition, and few had visited the country. Through the "Hi Craft" cultural hub, the company hopes to provide a more direct

way for Malaysian employees to learn about Ningbo's history, traditions and urban development.

"Hi Craft" helps bridge this cultural gap by bringing elements of Ningbo's heritage directly to overseas audiences, allowing more people to gain a closer understanding of the city and China, Rong said.

He added that the company will continue to support cultural exchanges between China and Malaysia through more activities, helping share Ningbo's heritage and urban identity with local communities.