

Physical AI is booming: The robotics and AI race between the West and China is hotter than ever.

Physical AI is becoming the 'chatGPT moment of robots'. Nvidia, Google, Siemens, and Alibaba are all joining the race to build platforms and machines for the real-world AI era.

The technology industry occasionally experiences periods of exceptional acceleration. This isn't a single breakthrough, but rather a convergence of multiple technologies that propel the entire field forward. Physical AI – artificial intelligence in the physical world – is entering precisely such a phase. Examining its origins and the reasons behind this current surge reveals a larger picture than any single product launch.

The concept of physical AI is quite straightforward: it refers to AI systems that not only process data or create content, but also possess the ability to perceive, reason, and act in the real world. This includes robots, self-driving cars, and machines that can adapt to their surroundings.

At the Consumer Electronics Show 2026 (CES) in January, NVIDIA CEO Jensen Huang called it the "ChatGPT moment of robotics." This comparison isn't just promotional; it implies that a technology that once existed primarily in the lab is beginning to enter the mass commercial market – much like what happened with ChatGPT.

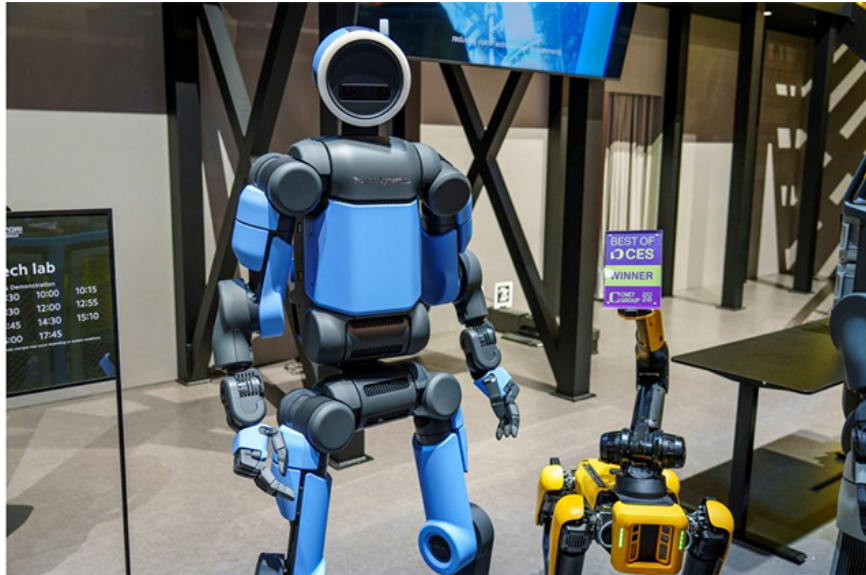
In fact, this transformation is taking place on many fronts, from factories in Silicon Valley to technology showcases in Shanghai.

The West is building a foundation.

In Western countries, the physical AI race primarily revolves around building the technological infrastructure. Interestingly, many of the companies investing most heavily are not robotics manufacturers, but rather technology infrastructure companies – entities that see robots as a 'new surface' on which AI can generate revenue.

NVIDIA has announced the open Cosmos and GR00T models for robotic learning and reasoning, and launched the Jetson T4000 module running on the Blackwell GPU architecture. According to the company, this platform can make robotic computing up to four times more energy efficient.

Meanwhile, Arm Holdings has established an entirely new business unit dedicated to physical AI, focusing on chip design for robots and smart vehicles.



In the industrial sector, Siemens and NVIDIA also announced plans to build an Industrial AI Operating System – an AI operating system for factories – with the goal of creating a manufacturing facility that is fully adaptable thanks to AI.

Another name that cannot be overlooked is Google. Recently, the company brought Intrinsic, the robotics software unit from Alphabet Inc.'s 'Other Bets' group, directly into its core ecosystem.

This move allows Google to build a vertically integrated technology stack for the manufacturing industry: AI modeling from Google DeepMind, robot deployment software from Intrinsic, and computing infrastructure from Google Cloud.

Within Google, a familiar analogy is also repeated: Android didn't win the smartphone market because it created the best phone, but because it became the platform that every device runs on. Google seems to be trying to do the same with physical AI.

The impact on businesses is already becoming apparent. According to a Deloitte survey of over 3,200 business leaders globally, 58% of companies have already adopted physical AI to some degree, and this number could rise to 80% within the next two years. This suggests the question now is no longer 'should we adopt it,' but rather how quickly we can adopt it and on whose platform.

The East is building the machine.

The story of physical AI in China takes on a different tone, leaning more towards hardware and actual manufacturing.

At this year's CCTV Spring Festival Gala, humanoid robots developed by various Chinese startups performed martial arts, aerial acrobatics, and synchronized dance routines in front of hundreds of millions of television viewers. This image stands in stark contrast to the clumsy prototypes from just a year ago.

It wasn't just a technological showcase. It was a statement of manufacturing capability.



By 2025, China will account for over 80% of all humanoid robots deployed globally and more than half of all industrial robots worldwide. This dominance stems from structural advantages that extend beyond software.

This country currently controls about 70% of the global lidar sensor market, leads in the production of harmonic reducers – the crucial gears that enable precise robot movement – and has drastically reduced hardware costs through large-scale production, similar to what they have done with the electric vehicle industry.

Alibaba Group is also joining the race with RynnBrain, an open-source AI model that helps robots understand the physical world and recognize objects. This platform is positioned to compete with NVIDIA's Cosmos and robotics projects from Google DeepMind.

Currently, China has over 140 domestic manufacturers of humanoid robots and has introduced more than 330 different robot models. This shows that their ambition in the field of embodied AI – AI connected to the physical body – has moved beyond the testing phase and into commercialization.

The combination of Western platform strategies and Eastern production scale is creating something entirely new: a global physical AI ecosystem developing simultaneously on multiple fronts.

The biggest difference in this wave of robotics lies in the fact that the technical barriers are gradually disappearing. Previously, deploying industrial robots typically required specialized engineering teams, months of custom programming, and acceptance of significant downtime.

New platforms developed by companies like Google, Nvidia, Siemens – and their Chinese rivals – are attempting to drastically reduce that barrier.

For example, automation company Vention (which raised \$110 million in January) says its physical AI platform can shorten automation project deployment times from months to just days. When this becomes the norm, the economic structure of the manufacturing industry will change significantly.

Beneath the product announcements lies a less-discussed geopolitical element. Every robotics platform model, every software platform layer, and every semiconductor architecture under development is tied to questions about supply chains, data sovereignty, and long-term control over industrial infrastructure.

The country – or company – that controls the software layer of physical AI could hold enormous leverage over global industrial operations for years to come.

Physical AI, therefore, is not just a new technological trend. It represents a major restructuring of how the world manufactures, transports, and operates on an industrial scale. The discussions taking place from semiconductor company boardrooms to factories in Shenzhen or Silicon Valley are no longer preliminary preparations – they are the future beginning to take shape.

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