



**Testimony of Jason Fiorillo,
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**United States House of Representatives
Energy and Commerce Committee
Subcommittee on Commerce, Manufacturing, and Trade**

Hearing on the topic of
**American Global Competitiveness at 250:
Legislative Proposals to Secure U.S. Technology Leadership**

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Chairman Bilirakis, Ranking Member Schakowsky, and distinguished members of the subcommittee, thank you for the opportunity to testify on this very important and timely topic. I am the Chief Legal Officer and General Counsel at Boston Dynamics, the world's leading developer of advanced mobile robots. Having worked for the company for seven years, and previously at a cutting-edge global semiconductor company for more than twelve years, I am acutely aware of the importance of national competitiveness in foundational advanced technologies, such as robotics.

Our company, founded over 30 years ago by a Massachusetts Institute of Technology professor and his graduate students, pioneered an industry which will result in advanced mobile robots becoming common in industrial, logistics, manufacturing, public safety, entertainment, defense and security applications. Advanced mobile robots are still a new technology, but our

robots are already in use in manufacturing facilities, semiconductor fabrication plants,¹ energy plants,² as well as in police departments. One of our robots has even taken bullets in the line of duty.³ Our robots are used by the Department of Homeland Security, federal law enforcement, and by U.S. and allied military agencies to investigate and neutralize the threat of improvised explosive devices, provide perimeter security in high value areas, and facilitate safer entry in known and unknown environments such as confined or potentially toxic spaces.⁴ We are headquartered in Massachusetts, with a growing workforce of over 1,100 employees, and we proudly design and manufacture our robots in the United States.

Exciting recent advances in AI are already accelerating the development of a new generation of mobile robots. Computer vision enables robots to perceive their environment, recognize objects, and offer contextually relevant services. Vision and natural language processing will enable us to more easily communicate with robots using language and gestures. Motion control software, created by machine learning and reinforcement learning, increasingly drives the robots, accelerating their development. Robots now learn tasks using AI technologies to observe and analyze the movements of people or other robots doing that task.⁵ But these advances in AI also enable competitors, including those headquartered in foreign adversarial

¹ See Global Foundries Case Study, available at <https://bostondynamics.com/case-studies/globalfoundries/>.

² See Meet Chevron's New Energy Watchdog, available at <https://bostondynamics.com/case-studies/meet-chevrons-new-energy-watchdog/>.

³ See "Robotic police dog shot multiple times, credited with avoiding potential bloodshed," Associated Press, March 27, 2024, available at <https://apnews.com/article/massachusetts-cape-cod-robot-dog-police-f63586d5286750702f396109c9a81836>.

⁴ See "Boston Dynamics Awarded Contract to Supply Spot to the Dutch Ministry of Defence," available at <https://bostondynamics.com/blog/boston-dynamics-awarded-contract-to-supply-spot-to-the-dutch-ministry-of-defence/>.

⁵ For a recent explanation from our robotics AI team of how we are using AI to make robots more capable than ever before, with accompanying illustrative videos, please see "Large Behavior Models and Atlas Find New Footing," Boston Dynamics, available at <https://bostondynamics.com/blog/large-behavior-models-atlas-find-new-footing/>.

nations, to quickly close the gap in capabilities. Their robots and ours can now be built and programmed in 30 months to perform feats that previously took 30 years to develop.

To cut to the chase, although federal policy can and should target specific companies that are of concern to national security, a broader all-of-government strategic approach is needed to support the long-term competitiveness of the entire U.S. advanced mobile robotics industry.

The New Generation of Robotics Compels Government to Support National Competitiveness

The types of products or machines that could be described as a “robot” are very broad. I focus my testimony on what I refer to as “*advanced mobile robotics*” or more generally, “*advanced robotic technologies*.” *Advanced robotic technologies* comprise highly agile mobile robots designed to be put to work in a variety of environments and applications, and whose functionality is trained by, or enhanced by, artificial intelligence or reinforcement learning algorithmic methodologies. They are distinct from traditional fixed-in-place manufacturing, processing or assembly robots, or simple automated devices, like dishwashers. National competitiveness in advanced robotic technologies is essential and should be an urgent priority for national policy action, for the following reasons:

1. **Advanced mobile robots are increasingly crucial in the manufacture, production, and supply chain of other goods.** These technologies will help address workforce shortages of the future due to demographic inevitabilities arising from diminishing birth rates in the United States and elsewhere. Humanoids and similar form factors allow for automated physical operations in workspaces designed and built for humans, allowing existing infrastructure and factories to remain in operation even

during labor shortages. The countries that build and deploy these advanced mobile robots will be the ones that are best poised to manufacture on their own shores efficiently, and to protect their supply chains in other industries, including automobiles, semiconductors, defense materials, and aerospace. Manufacturing in these other sectors has already been recognized by the federal government as being of national security importance to the United States. The robots that *enable and sustain* such manufacturing are a matter of economic security as well. Fast, agile manufacturing is, in turn, a key flywheel for advanced research and development. It is likely that robot acceleration may create a run-away amplification effect for technology development and industrial dominance.

2. Advanced mobile robots are the physical embodiment of artificial intelligence.

Various officials in the United States government have rightfully emphasized the need for the United States to win the AI race. Advanced mobile robots are the physical manifestation of AI, leveraging everything from computer vision and reinforcement learning to visual language action and large behavior models -- to learn how to interface with the real world and perform a wide range of useful tasks. Some of these tasks will have national security importance. Even if the United States leads on software AI, the potential for dominance of robotic hardware by foreign adversaries will create national security vulnerabilities. If domestic software can only be deployed in machines that have been produced elsewhere because of the erosion of the domestic robotics industry, software security will be insufficient. To win the AI

race, the United States must win the robotics race.

3. **Advanced mobile robotic technologies are dual-use.** A robot developed to navigate complex environments, using legs or other methods providing enhanced agility and dexterity, will eventually be useful in the battlefield. Just in the past few months, we have seen Chinese-made quadrupeds exhibited during China's military parade,⁶ and videos of Chinese humanoids training to fight in hand-to-hand combat.⁷ There have also been reports of quadrupeds armed with machine guns and used in joint military training exercises in Cambodia.⁸ And of course, U.S. forces have been using mobile robots for years to investigate and mitigate IEDs. Robots with enhanced mobility and AI-powered capabilities will be even more important in military applications, and we have seen in recent years how *aerial* robotics (drones), including those designed and intended for commercial or consumer use, can become consequential, or even outcome-determinant, in warfare.⁹ Therefore, ensuring the competitiveness of the domestic advanced robotics industry, including ground robotics systems designed and developed for commercial and industrial applications, is of national security importance.

⁶ See "Weaponised 'robot wolves' make cameo at China military parade," The Guardian, September 5, 2025, available at <https://www.theguardian.com/world/video/2025/sep/04/weaponised-robot-wolves-make-cameo-at-big-china-military-parade-video>.

⁷ See "China Just Held the First-Ever Humanoid Robot Fight Night," Vice.com, May 27, 2025, available at <https://www.vice.com/en/article/china-just-held-the-first-ever-humanoid-robot-fight-night/>.

⁸ See "Meet the Chinese army's latest weapon: the gun-toting dog," The Guardian, May 30, 2024, available at <https://www.theguardian.com/science/article/2024/may/30/chinese-armys-latest-weapon-gun-toting-dog>.

⁹ "Ukraine Says More Than 80% of Enemy Targets Now Destroyed by Drones," Defense News, January 28, 2026, available at <https://www.defensenews.com/global/europe/2026/01/28/ukraine-says-more-than-80-of-enemy-targets-now-destroyed-by-drones/>.

4. **Using foreign advanced mobile robotics technology in critical roles creates a risk of interference, access, and denial of service.** The unique combination of hardware, software, sensors, mobility, and communication mechanisms makes advanced mobile robots higher risk than other internet-of-things technologies, and it can be practically impossible to rule out tampering by adverse interests if done by the manufacturer. As robots become a critical part of key infrastructure, they become a potential and potent threat vector to that infrastructure. It is vital that advanced mobile robotic technologies continue to be available from trusted domestic sources.

Other Nations, Including U.S. Adversaries, Are Prioritizing Advanced Mobile Robotics

The importance of a competitive robotics industry is evident from efforts made by other nations to support and promote their domestic robot industries. A typical way for governments to support their robot industries is via the development and execution of a national robotics strategy. Nations that have implemented some form of national strategy initiative for robotics include Japan, South Korea, Singapore, Germany, France, the Netherlands, India and China. *See* “A Time to Act: Policies to Strengthen the US Robotics Industry,” Information Technology & Innovation Foundation, July 18, 2025, available at <https://itif.org/publications/2025/07/18/time-to-act-policies-to-strengthen-us-robotics-industry/>.

China, especially, illustrates through action the strategic importance of its advanced mobile robotic technologies sector. In February 2025, the CEO of prominent Chinese robotics company Unitree, which develops and manufactures quadrupeds and humanoids, was seated prominently across from Chinese President Xi at a summit of tech executives. *See* “What did China’s tech entrepreneurs tell Xi Jinping at the symposium?” *South China Morning Post*,

February 21, 2025, available at <https://www.scmp.com/tech/big-tech/article/3299599/what-did-chinas-tech-entrepreneurs-tell-xi-jinping-symposium>. China also recently hosted a humanoid half-marathon in which a robot produced by Honor (the Huawei spin-off robotics company) performed better than the human world-record holder. “Humanoid robot wins Beijing half-marathon, defeating the human world record,” PBS News, April 19, 2026, available at <https://www.pbs.org/newshour/world/humanoid-robot-wins-beijing-half-marathon-defeating-the-human-world-record>. This follows from an Olympics-style robot competition last year. See “Tesla Optimus rival Unitree shines at the ‘World Humanoid Robot Games’ in China,” *CNBC*, August 18, 2025, available at <https://www.cnn.com/2025/08/18/world-humanoid-robot-games-china-tesla-unitree.html>.

The elevation of China’s robotics community onto its national stage is not accidental. Instead, it is a direct consequence of comprehensive government support of China’s robotics industry and its national AI policy. For example, we note the PRC’s “Fourteenth Five-Year Plan for the Robotics Industry” (2021-2025), Central People's Government, December 21, 2021, available at https://www.gov.cn/zhengce/zhengceku/2021-12/28/content_5664988.htm as well as its “Implementation Plan for the ‘Robotics Plus’ Application Special Operation,” PRC Central People's Government, January 18, 2023, available at https://www.gov.cn/zhengce/zhengceku/2023-01/19/content_5738112.htm. These documents outline the many mechanisms and policies that have supported the Chinese robotics industry, ranging from government funded R&D, to tax deductions, to government acting as first adopters to SOE robot procurement prioritization. *See also* China M.I.I.T. “Guiding Opinions on the Innovative Development of Humanoid Robots,” Center for Science and Technology Innovation

(Beijing), November 3, 2023, available at

https://www.ncsti.gov.cn/zcfg/zcwj/202311/t20231103_140346.html.

Commentators and experts have evaluated the impact of these policies on the industry. See, e.g., “America Is Missing The New Labor Economy – Robotics,” *SemiAnalysis*, March 11, 2025, available at <https://semianalysis.com/2025/03/11/america-is-missing-the-new-labor-economy-robotics-part-1/> (indicating that there is “an existential threat to the US as it is outcompeted in all capacities”); “The Humanoid 100: Mapping the Humanoid Robot Value Chain,” Morgan Stanley, available at https://advisor.morganstanley.com/john.howard/documents/field/j/jo/john-howard/The_Humanoid_100_-_Mapping_the_Humanoid_Robot_Value_Chain.pdf (“Our research suggests China continues to show the most impressive progress in humanoid robotics where startups are benefitting from established supply chains, local adoption opportunities, and strong degrees of national government support.”); “How Innovative Is China in the Robotics Industry?,” Information Technology & Innovation Foundation, available at <https://itif.org/publications/2024/03/11/how-innovative-is-china-in-the-robotics-industry/> (“China had 12 times the rate of robot use in manufacturing than did the United States.”); Testimony of Sunny Cheung, Jamestown Foundation, before the U.S.-China Economic and Security Review Commission, February 6, 2025, available at https://www.uscc.gov/sites/default/files/2025-02/Sunny_Cheung_Testimony.pdf (“The results of these sustained efforts are evident in the rapid rise of leading Chinese robotics companies such as UBTech, Fourier Intelligence, Unitree Robotics, and major tech giants like Xiaomi and XPeng, which have expanded into humanoid robotics development. These companies are increasingly competitive in global markets, not just as adopters of automation but as innovators producing

cutting-edge robotic systems with intelligent AI integration.”); *Embodied Intelligence: The PRC’s Whole-of-Nation Push into Robotics*, Sunny Cheung, Jamestown Foundation, August 9, 2025, available at <https://jamestown.org/program/embodied-intelligence-the-prcs-whole-of-nation-push-into-robotics/> (“The rise of the PRC’s robotics industry represents a tightly coordinated, whole-of-nation campaign driven by national strategy, regional policy alignment, and deep industrial integration.”).

National strategies in Chinese industry policy are often executed via material government subsidies at the local or provincial level. See *Far From Normal: An Augmented Assessment of China’s State Support*, Rhodium Group, March 17, 2025, available at <https://rhg.com/research/far-from-normal-an-augmented-assessment-of-chinas-state-support/> (“China spends more through direct grants and tax benefits than any other major economy, both in absolute amounts and as a share of GDP”). “China’s industrial policy spending is enormous, totaling at least 1.73 percent of GDP in 2019. This is equivalent to more than \$248 billion at nominal exchange rates and \$407 billion at purchasing power parity exchange rates.” See “Red Ink: Estimating Chinese Industrial Policy Spending in Comparative Perspective,” Center for Strategic & International studies, available at <https://www.csis.org/analysis/red-ink-estimating-chinese-industrial-policy-spending-comparative-perspective> According to Jamestown Foundation’s research, State-sponsored overproduction is another policy-driven approach that will have an impact on the robotics sector. See, e.g., *Beyond overcapacity: Chinese-style modernization and the clash of economic models*, Mercator Institute for China Studies, April 1, 2025, available at <https://merics.org/en/report/beyond-overcapacity-chinese-style-modernization-and-clash-economic-models> (indicating that “advanced industrial machinery and components” is one of the sectors most likely to see overcapacities emerge due to Chinese government policy).

China has used state-backed financing to boost its intelligent robotics industry, offering tens of millions of dollars in subsidies, loans and other financial support. “[P]rovinces and cities [in China] are engaged in a de facto ‘subsidy race,’ each vying to foster the next national robotics champion within their jurisdiction.” *Id.*

One example of Chinese government support is the “little giant” designation. Enterprises that secure a national designation from China’s Ministry of Industry and Information Technology (MIIT) as specialized, refined, distinctive, and innovative “little giant” firms are eligible for provincial funding, reduced corporate income tax rates, accelerated depreciation of R&D equipment, and matching grants for innovation projects. Our research of sources in China indicates that various leading Chinese robotics companies have received the so-called “little giant” designation, including Unitree but also DEEP, Fourier, Leju, Qiteng, and Tianlian. This designation signals their ability to access a wide range of government funding and support. Indeed, a recent Guangdong province policy document, “Notice on Organizing the Project Entry of Specialized, Refined, Distinctive, and Innovative ‘Little Giant’ Enterprises in the Field of Artificial Intelligence and Robotics” (September 2, 2025), outlines subsidies for designated “little giant” enterprises specifically in the field of AI and robotics. It is evident that China’s robotics producers have been the beneficiaries of state subsidies and support.

China is proceeding expeditiously with its government-sponsored industrial strategy. As just one example, in November 2025, the Chinese government formed an advisory committee on humanoid robotics, overseen by the Ministry of Industry and Information Technology, and appointed the CEOs of Unitree and AgiBot as co-chairs.¹⁰ By March 2026, barely three months

¹⁰ “Unitree, AgiBot founders, China’s robotics stars, join panel to shape industry standards,” South China Morning Post, November 25, 2025, available at <https://www.scmp.com/tech/policy/article/3333964/unitree-agibot-founders-chinas-robotics-stars-join-panel-shape-industry-standards> .

later, working together with 120 research institutions, the committee had already developed and released a six-pillar national standard for humanoid robotics, described as the “first comprehensive, top-level design covering the entire industrial chain and full lifecycle of humanoid robotics and embodied intelligence.”¹¹

China’s strategy for advanced mobile robotic technologies mimics the same approaches that it has used in other technology sectors: marketing products at prices which can only be possible by government support, intentionally over-produced and/or sold below cost. If left unchecked, over time, the impact of China’s state support will echo in robotics the results seen in unmanned aircraft systems (drones), solar cells, robotic vacuums and possibly even electric vehicles: producers in the United States will struggle to compete, lose sales due to price differentials, and eventually many of them may be forced to drop out of the market.

Due to the nascent nature of the advanced mobile robotic technologies industry, these impacts have yet to be felt in the U.S. industrial sector, but they have become evident in research universities and academic institutions, who are typically the early adopters of such technologies. As the pioneer in this space, Boston Dynamics’ Spot robot dominated the research market from 2020-2022. Since then, that market has been flooded with the less-expensive, less reliable, less safe and less featured Chinese brands, simply because the products were seen as “good enough” and significantly less expensive. This rapid shift in the academic/research market foreshadows the potential future dominance of foreign producers of advanced mobile robotic technologies across other sectors worldwide, such as manufacturing, energy, logistics, security patrol, law enforcement, and even defense. Indeed, we are already seeing a notable increase in adoption of

¹¹ “China’s first national standard system for humanoid robotics poised to spur industry development,” Xinhua, March 3, 2026, available at <https://english.news.cn/20260303/0e51ac8f66c542c5bacf2af3f80b3a40/c.html> .

Chinese quadruped robot “dogs” by domestic law enforcement agencies, similar to the early years of Chinese drone adoption by law enforcement agencies.¹² Additionally, network effects here mean that as a platform becomes dominant in the new market, new capabilities and applications will favor that platform, leading to a substantial first mover advantage. Recent industry announcements indicate that even American industry leaders are taking actions to establish Chinese robot producers as the standard platform for humanoid robot research.¹³

The role of robotics across key industrial sectors, and the extent of the Chinese government’s support for robotics, are starkly revealed by the Chinese government’s new five-year plan, released earlier this year in Beijing. Robotics “now commands its own dedicated inset box among the plan’s top ten ‘new industry tracks.’” *China’s New Five-Year Plan Prioritizes Robotics. The World Should Pay Attention*, The Diplomat, March 14, 2026.

[R]obotics is not treated as a standalone sector but as an enabler woven across chapters on manufacturing, digital transformation, elderly care, national security, and even cultural development. This is less an industrial policy *for* robots than an industrial policy *through* robots.

Id. (emphasis in original).

This new plan makes clear that the full support of the Chinese government now stands behind its robotics sector, including “access to the 60 billion RMB (\$8.2 billion) National AI Industry Investment Fund, provincial matching funds, and the full apparatus of state-backed venture capital.” *Id.* These efforts are currently unmatched by any policy efforts in the United States to support its domestic advanced mobile robotics industry.

¹² US police departments and public safety agencies that have recently adopted Chinese “robot dog” models include [Brawley Police Department](#) (California), [Charles County DES](#) (Maryland), [Topeka Police Department](#) (Kansas), [Pullman Police Department](#) (Washington), and [Port St. Lucie Police Department](#) (Florida).

¹³ “Nvidia picks Unitree for humanoid robot platform as Chinese startup eyes IPO,” CNBC, June 1, 2026, available at <https://www.cnbc.com/2026/06/01/nvidia-unitree-humanoid-robotics-system-researchers.html> .

The Cybersecurity Threat

Robots that are not secure and that contain cyber vulnerabilities, especially those produced by adversarial actors, pose a variety of serious risks to the facilities and/or agencies that deploy them.

Advanced mobile robots present new and unique classes of cybersecurity risk beyond AI and computer systems. These robots are complex systems made of software and hardware. When produced by adversarial nations they carry larger probabilities of being compromised with backdoors and remote access allowing nation-state attackers (intelligence, military, or even civilian) to take control. If compromised robots become critical components of in turn security critical systems, attackers can sabotage those systems, interfere with a manufacturing line or halt a security patrol. They could also report inaccurate or intentionally misleading information. For example, instead of accurately reporting a temperature reading of a critical component in an energy production or manufacturing facility, a compromised robot could simply mis-report or fail to report the anomaly, leading to subsequent catastrophe. Further, as robot capabilities approach and exceed those of humans in terms of seeing, moving, and manipulation, a compromised robot gives attackers eyes and hands throughout sensitive facilities. We are already seeing the beginning of the deployment of foreign robots in sensitive American facilities. See, e.g., “Dowagiac data center to deploy Chinese humanoid robots to support development of autonomous workflows,” *The Midwesterner*, June 22, 2026, available at <https://www.themidwesterner.news/2026/06/dowagiac-data-center-to-deploy-chinese-humanoid-robots-to-support-development-of-autonomous-workflows/> (“[c]ompany plans to use 142 humanoid robots at the facility” in Michigan). Growing autonomy lets these robots take actions

on their own. In fact, many modern advanced mobile robotics have strength, range of motion, speed and other attributes that we classify as super-human.

Public security researchers have additionally demonstrated clear gaps in Chinese manufactured robot security. Even in the absence of specific attack intent, these vulnerabilities open users of these systems to potential third party attacks.

Securing systems that are used in high-value or sensitive operations should be a priority for both engineers and nations. Boston Dynamics has set out our approach to securing robots in a whitepaper describing how we maximize the security of our products, including the features and design considerations which enable these platforms to be trusted parts of customer IT integrations. See <https://bostondynamics.com/wp-content/uploads/2024/03/spot-and-site-hub-security-white-paper.pdf>.

Case Study: Unitree

Unitree has been the most visible Chinese company marketing and selling its legged robots in the United States, and also appears to have been chosen by the government of China as a national champion. News media have reported cybersecurity vulnerabilities in the company's products, including data exfiltration exploits and remote-control backdoor access.¹⁴ Additional security research relating to Unitree robots that did not receive wide press coverage include a reported exploit that enables a network-based takeover of the robot and the discovery of a reported Unitree AI/LLM cloud service that could cause arbitrary commands to be executed on

¹⁴ See "Exploit Allows for Takeover of Fleets of Unitree Robots," IEEE Spectrum, Sept 25, 2025, available at <https://spectrum.ieee.org/unitree-robot-exploit> and "Unitree humanoid robots send data to China every 5 minutes, raising security fears," Interesting Engineering, October 1, 2025, available at <https://interestingengineering.com/innovation/security-flaw-unitree-humanoids-china>.

the robot.¹⁵ The company also seems to be widely engaged in white labeling products that appear in the United States under different brand names.¹⁶

A few weeks ago, following earlier reports of connections between Unitree and the PLA,¹⁷ Unitree was placed on the Department of War's Section 1260H list of Chinese Military Companies.¹⁸ Earlier this year, forty-nine Unitree humanoids performed at a high profile Spring Festival spectacular, dancing rhythmically, vaulting, breakdancing, and mock sword fighting, showing a high degree of confidence in placing fast-moving robots next to child performers before a live audience. Unitree is also moving forward with an initial public offering this year, in which it is reported to be seeking to raise at least \$610 million USD at a valuation of \$3-7 billion.¹⁹ Given its market penetration, reported security vulnerabilities, and apparent ties to the Chinese government and military, it is not surprising that Unitree has earned the focus and attention of the US government, security analysts and policymakers.

¹⁵ For the original research reporting these issues, see: "The Jailbroken Unitree Robot Dog," available at https://www.darknavy.org/darknavy_insight/the_jailbroken_unitree_robot_dog/; "39C3 - Skynet Starter Kit: From Embodied AI Jailbreak to Remote Takeover of Humanoid Robots," available at https://www.youtube.com/watch?v=qjA_5-Bybs; "Skynet Starter Kit – Researchers control humanoid robots via radio & AI," available at <https://www.heise.de/en/background/39C3-Skynet-Starter-Kit-Researchers-control-humanoid-robots-via-radio-AI-11125615.html>.

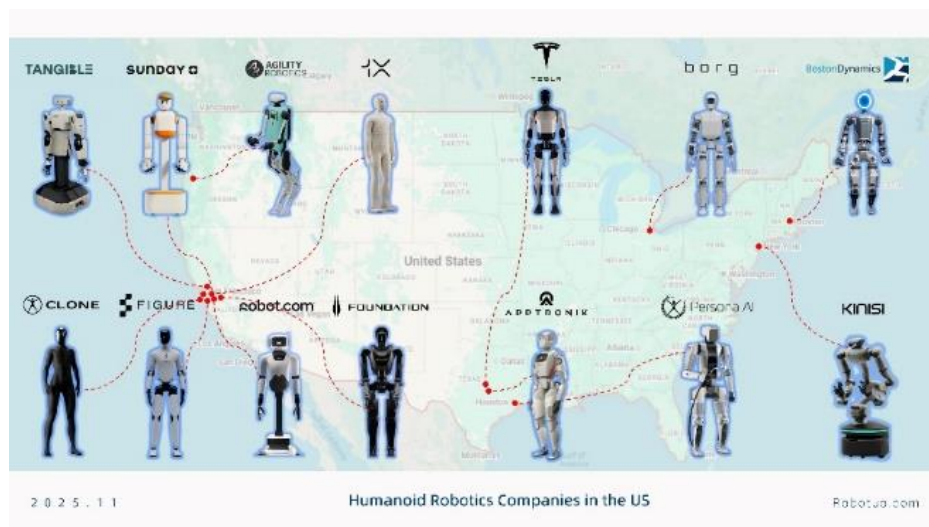
¹⁶ One example is a flamethrower-equipped quadruped robot sold by a company called Throwflame, which is obviously a white-labelled Unitree robot. <https://throwflame.com/products/thermonator-robodog/>. Another company, Robot.com, is using rebranded Unitree robots for urban delivery. <https://www.robot.com/>.

¹⁷ "The Robot Dog's Time to Kill": At China's Star Robotics Firm, the Military Ties Keep Mounting," Kharon The Brief, July 17, 2025, available at <https://www.kharon.com/brief/unitree-robotics-china-pla>.

¹⁸ "DOW Releases List of Chinese Military Companies in Accordance With Section 1260H of the National Defense Authorization Act for Fiscal Year 2021," Department of War, June 8, 2026, available at <https://www.war.gov/News/Releases/Release/Article/4511232/dow-releases-list-of-chinese-military-companies-in-accordance-with-section-1260/>. See also "Pentagon says Alibaba, Baidu, BYD, and Unitree support China's military," TechCrunch, June 8, 2026, available at <https://techcrunch.com/2026/06/08/pentagon-says-alibaba-baidu-byd-and-unitree-support-chinas-military/>.

¹⁹ "Chinese Robot Maker Unitree Seeks \$610 Million in Shanghai IPO," Bloomberg, March 20, 2026, available at <https://www.bloomberg.com/news/articles/2026-03-20/chinese-robot-maker-unitree-seeks-610-million-in-shanghai-ipo>.

However, there are dozens of other Chinese companies making rapid progress with government support, particularly in the humanoid space. At the 2026 Consumer Electronics Show in Las Vegas, where we debuted the new version of our Atlas humanoid robot, Chinese companies displaying humanoid robots appeared to outnumber US companies by a factor of five to one. On social media, industry observers are tracking dozens of Chinese humanoid companies, compared to just a handful in the United States:



Beijing										
Shanghai										
Shenzhen										
Hangzhou (Zhejiang)										
Others										
	Suzhou	Suzhou	Suzhou	Nanjing	Guangzhou	Guangzhou	Foshan	Hefei	Qingdao	Jinan

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Humanoid Robotics Companies in China

Robotuo.com

(Source: https://x.com/Robo_Tuo/status/1991882471156457894)

This wide set of actors means that, **although federal policy can and should target specific companies that are of concern to national security, a broader all-of-government strategic approach is needed to support the competitiveness of the U.S. advanced mobile robotics industry.**

Accelerated Adoption Would Benefit Competitiveness

In the era of AI-powered robots, rapid and broad deployment is key. This is because the “real world” data generated by a robot in an actual deployment is the most useful data to help make the robot perform better. This “fly-wheel effect” of deployments bolstering development means that the sooner the United States deploys quadruped, humanoid, and other advanced forms

of AI-powered robots, the more competitive the robots will be in the international marketplace, and the sooner they will help US industries, such as manufacturing, modernize.

China's government understands the flywheel effect, which is why recently its Ministry of Industry and Information Technology recently directed the industry and information technology authorities of Beijing, Tianjin, Shanghai, Jiangsu, Zhejiang, Shandong, Hubei, Hunan, Guangdong, and Sichuan to launch a Special Action program for the real-world training of humanoid robots. See

https://www.miit.gov.cn/zwgk/zcwj/wjfb/tz/art/2026/art_f291ccd3da4c47ce95741de63cc088e6.h

[tml](#). This program directs that, by the end of 2026, humanoids will have completed verification and routine deployment in more than 100 high-value application scenarios, with a goal of deploying 10,000 units by year-end. See “China fast tracks humanoid robots and embodied AI into industry under nationwide programme,” South China Morning Post, June 10, 2026, available at <https://www.scmp.com/economy/china-economy/article/3356629/china-fast-tracks-humanoid-robots-and-embodied-ai-industry-under-nationwide-programme>. Additionally, China's State-owned Assets Supervision and Administration Commission (SASAC) issued the “Notice on the 2026 Special Action for Real-World Training and Deployment of Humanoid Robots and Embodied Intelligence,” directing state-owned enterprises to open their facilities as “real-world training spaces.”²⁰

There is nothing remotely comparable in terms of United States government strategy or support to the industry. Of course, we would not expect the US government to use a heavy hand

²⁰ See “The Ministry of Industry and Information Technology and the State-owned Assets Supervision and Administration Commission launched the 2026 Special Action Plan for Real-Scene Training of Humanoid Robots and Embossed Intelligence,” Xinhua, June 12, 2026, available at <https://www.news.cn/tech/20260612/a069b3a9948b4e0aaaa94cf3d618e545/c.html>; see also https://www.ncsti.gov.cn/kjdt/tzgg/202606/t20260609_249248.html.

in compelling subsidized technology installations in private industry, but there is much the government can do to encourage and accelerate broader, rapid adoption.

There Is Overwhelmingly Broad, Bipartisan Consensus That We Need a National Robotics Strategy

Boston Dynamics began calling for the development of a national robotics strategy in 2023. In the years that followed, an impressive number of think tank thought-leaders and trade associations have joined our call, similarly urging the development of a national robotics strategy:

- **The Association for Advancing Automation (A3):** “The US should adopt a national government strategy for robotics to both capitalize on opportunities and real and perceived risks amongst the populace. A national strategy is crucial not only to industrial development, global competitiveness and economic prosperity, but also to the national security and defense industrial base of the United States and its allies.”²¹
- **Association for Uncrewed Vehicle Systems International (AUVSI):** “We urge Congress and the Administration to develop and implement a comprehensive National Robotics Strategy to accelerate the design, production, and adoption of advanced robotics for our national defense and to ensure American economic and industrial competitiveness.”²²
- **The Special Competitive Studies Project (SCSP):** “Memo to the President: Set national-level technology goals for robotics that ensure U.S. leadership in development, deployment, and responsible use, driving economic growth, enhancing national security, and improving quality of life.”²³
- **The Information Technology & Innovation Foundation (ITIF):** “A national robotics strategy is so important. Although complex to implement, a national strategy encompassing most or all elements of robotics growth is the most effective way to build a nation of robotics innovation.”²⁴

²¹ <https://www.automate.org/robotics/news/a3-releases-vision-for-a-u-s-national-robotics-strategy>

²² <https://www.auvsi.org/wp-content/uploads/2026/02/AUVSI-PFRC-Whitepaper.pdf>

²³ <https://www.scsdp.ai/wp-content/uploads/2025/02/Robotics-Memo.pdf>

²⁴ <https://itif.org/publications/2025/07/18/time-to-act-policies-to-strengthen-us-robotics-industry/%20https://itif.org/publications/2025/07/18/time-to-act-policies-to-strengthen-us-robotics-industry/>

- **Center for Strategic & International Studies (CSIS):** “No other country combines cutting-edge AI, frontier robotics research, and deep software talent the way the United States does. The technical foundation is already in place; what’s missing is the national strategy to turn invention into impact. A robotics strategy would secure the machinery of modern industry, connect workers to new opportunities, and anchor U.S. leadership over the technologies shaping the global economy. Without it, even the most ambitious investments risk falling short.”²⁵
- **Jamestown Foundation:** “What the U.S. needs is a national robotics strategy, one that recognizes robotics as a strategic domain on par with energy, biotechnology and artificial intelligence.”²⁶
- **American Enterprise Institute (AEI):** “Failing to take the robotics race seriously means watching Beijing set the rules of the automated economy, and risks leaving American power to rust. The Trump administration has a narrow window to act before Chinese robotics companies gain an unassailable foothold in global markets. The American response must match the scale of the threat.”²⁷

At hearings on Capitol Hill this year, witnesses from industry have asked for the same, and Members of Congress have agreed. **It is now beyond evident that there is broad, bipartisan consensus for the development and implementation of a national robotics strategy.**

Recommendations

We respectfully make the following recommendations to this subcommittee, to Congress, and to the broader United States government:

1. **Pass the *National Commission on Robotics Act*, as a Step Towards a National Robotics Strategy**

²⁵ <https://www.csis.org/blogs/strategic-technologies-blog/why-united-states-needs-robots-rebuild>

²⁶ <https://www.thewirechina.com/2026/02/15/why-washington-needs-a-robotics-strategy/>

²⁷ <https://nationalinterest.org/feature/beijings-robot-army-isnt-science-fiction-its-already-here>

Recently, a bipartisan bill was introduced in the House that would establish a National Robotics Commission, H.R. 7334.²⁸ Modeled on the previous AI and Biotech Commissions that were so useful to those industries and to government stakeholders, a Robotics Commission would bring experts, industry, and government together to recommend the policies that would support the growth and success of the industry.

While Chinese advisory committees have already made quick progress on collaborative standards and strategies, and yet another five-year plan has emerged from the Chinese government that elevates robotics even more than the prior plans, and while about a dozen other countries have their own robotics strategies, the United States government has yet to move forward with establishing a deliberative body or tasking an agency to begin developing its own national strategy. Time is running short and we urge Congress to move forward as soon as possible with this legislation and related policy efforts to kick-start the development of a national robotics strategy.

2. Accelerate Adoption of Advanced Robotic Technologies

Time is of the essence. The following initiatives can and should be part of a national robotics strategy, but we would urge developing and deploying meaningful policies as soon as possible, such as:

- **Government as an early adopter:** Government agencies themselves can and should become early adopters of advanced mobile robotic technologies.

Government agency applications for robots include logistics, warehousing, perimeter security patrol, public safety, defense, transportation, infrastructure,

²⁸ A bipartisan Senate companion bill was also recently introduced, S. 4686.

research laboratory, education, and others. Congress should, when working on reauthorization legislation and budgets, instruct and fund agencies to adopt robots in the interest of government efficiency and to support competitiveness.

- **Tax incentives:** Congress should explore tax mechanisms that incentivize the manufacture and adoption of robots made in the United States. These mechanisms could include accelerated depreciation and tax credits. Given that many of these newer robotic technologies will be integrated into industrial environments as services rather than capital expenditures, and that small and medium enterprises might be more willing to adopt robotics if there were no up-front large capital expenditure, mechanisms should be explored to provide tax benefits to those adopting robotic technologies via non-traditional installation methods (e.g. “robot as a service”).
- **Drive cultural change:** Government can also act to facilitate culture change. It is our observation that some industries, such as manufacturing, tend to be reluctant and slow to adopt advanced mobile robotics because they are set in their ways. As demographics pose an increasing worker shortage, this culture will need to change. If culture change lags behind workforce needs, American industries will face a labor crisis and the foreign competitors who have adopted robotics will become dominant. We urge the federal government to become champions and promoters of robotics technology solutions across industrial domains, and to develop best practices in close coordination with industry, to encourage the embrace of the technologies that will help reshore manufacturing, and enhance the safety and productivity of American

industries and infrastructure. We applaud a new example of, and great precedent for, such agency robotics initiatives, launched days ago by the U.S. Department of Transportation, featuring a *Strategy Report on the State of Robotics in Transportation* and a “DOT Bots” innovation challenge featuring prizes to encourage the use of robotics technology to improve America’s transportation systems.²⁹ This initiative will educate and inspire state and local governments, as well as the transportation and infrastructure contractors who serve them, to explore and adopt robotics in their operations, immediately making our infrastructure projects safer and more efficient. Other agencies ought to develop similar initiatives across their respective domains. Congress should direct and fund them to do so.

3. Ensure Consistent National Frameworks for AI and Robotics

As robotics become more widely deployed and attract the interest of lawmakers, and as the intersection of AI and robotics creates the possibility that AI legislation will, intentionally or not, capture physical AI (robotics) within its scope, we urge Congress to establish a clear, unified federal approach that minimizes fragmentation across states while reinforcing public trust and safety. The long-term success of robotics depends on transparent, predictable, and responsible use aligned with existing laws, including safety and the application of AI technologies. As robotics systems increasingly integrate advanced AI capabilities, regulating them under siloed or inconsistent regimes risks undermining both innovation and public confidence.

²⁹ See “Trump’s Transportation Secretary Sean P. Duffy Launches Inaugural Robotics in Transportation Competition,” U.S. Department of Transportation press release, June 25, 2026, available at <https://www.transportation.gov/briefing-room/trumps-transportation-secretary-sean-p-duffy-launches-inaugural-robotics> .

We recommend that Congress adopt a harmonized, risk-based national framework – one that includes targeted federal preemption in core areas such as safety standards, testing protocols, and commercial deployment – to avoid a patchwork of state requirements. Such a framework would provide regulatory certainty while supporting ethical guardrails, including clear prohibitions on misuse, and alignment with broader AI governance structures. This approach reflects industry efforts, including our support for responsible robotics legislation, to ensure safe adoption and market stability as these technologies scale.

4. Restore the Competitive Playing Field with Respect to China

To restore a competitive playing field with respect to China, we must recognize the scale of state-backed support underpinning China’s robotics sector and the resulting economic and security challenges for U.S. companies. Chinese firms benefit from coordinated industrial policy, extensive subsidies, and national strategies designed to integrate AI-powered robotics across critical sectors, contributing to China’s dominant share of global robot deployment and growing presence in U.S. markets.

At the same time, serious security risks associated with certain foreign platforms, including cyber vulnerabilities and potential links to state-backed entities, remain. In response, we urge Congress to adopt a comprehensive strategy to re-level the playing field, pairing targeted restrictions on high-risk technologies from abroad with proactive investments in domestic innovation, manufacturing, and workforce development.

Advancing legislation in this regard would help mitigate security risks, strengthen trusted supply chains, and counter unfair competitive practices. Together with a broader national robotics strategy, these measures would reinforce U.S. leadership while ensuring that robotics technologies deployed across the economy are secure, reliable, and aligned with American values.

5. Stimulate Domestic and Friend-Shored Supply Chains

As was recently highlighted by the Chinese export restrictions on rare-earth minerals and associated products, we should anticipate that China may take active measures to constrain the U.S. advanced mobile robotics industry. Accordingly, the U.S. government should meaningfully stimulate the domestic or friend-shored production of essential components for advanced mobile robotics. These include high-tech ingredients like sensors, computational processors, actuators, and slip joints, along with low-tech items like ball screws and cooling systems. The U.S. government should also identify those allied nations (i.e. Korea, Japan and Taiwan) or regions (the E.U. or North America) upon whom domestic manufacturers can reasonably rely in anticipation of potential supply chain interruption by adverse nations.

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Boston Dynamics is grateful for the opportunity to share our perspectives with you on this important topic. I look forward to your questions.