

Federal Preemption In AI And Robotics Is Essential

By **Steven Weisburd** (February 18, 2026)

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In 2025, artificial intelligence established itself as a pivotal driver of U.S. economic growth, as massive capital investment in data centers, advanced semiconductors and high-performance computing infrastructure became a major contributor to national expansion.

Looking ahead to 2026, Goldman Sachs and other analysts project an even faster trajectory, with AI-driven productivity gains poised to outpace traditional engines such as consumer spending, housing and manufacturing.[1]

Increasingly, economists attribute a meaningful portion of recent U.S. growth to AI-related capital expenditures, particularly the rapid build-out of digital infrastructure that has become a pillar of American economic resilience amid global uncertainty.[2]

As this digital revolution transitions into the physical domain of robotics — encompassing advanced humanoid systems for industrial automation, autonomous vehicles, surgical robots for precision healthcare and service bots for everyday assistance — the U.S. confronts a significant and largely self-imposed challenge: a fragmented and inconsistent patchwork of state-level regulations.

These state laws, often well-intentioned and motivated by concerns over bias, safety, privacy and accountability, now threaten to create serious if not disabling barriers to nationwide deployment, cross-state scalability and rapid innovation. The consequences extend beyond domestic inefficiency. As the U.S. struggles with regulatory inconsistency, China is rapidly scaling a centralized, state-backed AI and humanoid robotics industry designed for speed, scale and global market dominance.[3] The contrast is stark.

Recognizing this challenge, President Donald Trump issued an executive order on Dec. 11 to create a federal regulatory regime for AI. The order authorizes federal agencies to challenge state laws deemed burdensome to AI development and deployment through litigation, conditional federal funding, and recommendations for congressional action.

Administration officials have indicated that this framework is expected to extend to advanced robotics, with a national robotics strategy expected in 2026.[4] U.S. Department of Commerce Secretary Howard Lutnick has framed robotics acceleration as a core component of U.S. economic security and a necessary response to China's advances in embodied AI.[5]

At the center of this emerging policy approach is federal preemption — the constitutional principle rooted in the supremacy clause that allows federal law to override conflicting state regulation, especially in areas implicating interstate commerce, national security and economic competitiveness.

In the AI and robotics context, preemption is not necessarily a call for deregulation, but

rather for regulatory coherence — a unified national framework that eliminates internal friction, enables scale and allows American firms to compete globally under clear, consistent rules.

At this critical juncture in American policymaking, it is worth pausing to consider: the explosive economic potential of AI and robotics; the debilitating threats to growth and competitiveness posed by state-level regulatory fragmentation; China's unified national strategy as a cautionary and competitive benchmark; the momentum building within the Trump administration's framework; the sector-specific opportunities that preemption could unlock; common counterarguments and their rebuttals; and a balanced path forward for effective implementation.

The Explosive Economic Potential of AI and Robotics

The economic implications of AI and robotics for the U.S. are profound, with leading economic models projecting sustained gains from AI-driven automation, optimization and innovation, so long as deployment is not materially slowed by regulatory barriers.[6] These anticipated benefits extend beyond private firms, promising increased tax revenues, improved public sector efficiency and long-term fiscal benefits.

Robotics, as the embodied extension of AI, exponentially amplifies the potential real-world benefits by bridging digital intelligence with physical action. Unlike purely digital tools, robots can directly substitute for or augment human labor in manufacturing, healthcare, logistics, agriculture and infrastructure. Humanoid and advanced industrial robots now under development promise to integrate perception, reasoning and dexterity at levels that were science fiction only a decade ago.

McKinsey's forecasts indicate that AI-robotics synergy could inject approximately \$13 trillion into the global economy by 2030, with breakthrough applications in manufacturing (automated assembly lines reducing downtime); healthcare (robotic surgeons improving precision and outcomes); logistics (autonomous fleets optimizing routes and reducing fuel consumption); and agriculture (precision robots enhancing yield while minimizing waste).[7]

For the U.S. to capture a disproportionate share of this worldwide growth, achieving regulatory harmony through federal preemption is crucial. Preemption ensures a uniform national approach that would facilitate seamless interstate operations, reduce unit costs through economies of scale, attract and enable necessary investment, and nurture vibrant ecosystems of supporting industries that could generate high-skilled jobs in areas like robot programming, maintenance, ethical oversight and integration.

Investors demand predictability. The capital-intensive nature of AI and robotics, particularly in infrastructure, manufacturing and deployment, means that uncertainty created by inconsistent state regulation can materially slow or redirect investment. A coherent federal framework would provide the certainty necessary to sustain long-term growth.

The Threat of State-Level Regulatory Fragmentation

Against this backdrop, the proliferation of state-level AI legislation presents a serious challenge. In 2025 alone, lawmakers across all 50 states and U.S. territories introduced well over a thousand AI-related bills, with dozens enacted into law.[8]

While states have historically served as laboratories of democracy, the sheer volume, speed and divergence of AI regulation has produced a fragmented and often conflicting regulatory

environment.

According to the National Conference of State Legislatures, "[t]hirty-eight states adopted or enacted around 100 measures" in 2025, with California, Texas, New York, Colorado, Utah, Montana and Arkansas being particularly active.[9]

Some states mandate extensive risk assessments for high-impact AI systems, while others emphasize transparency, disclosure or antidiscrimination standards. Certain laws risk exposing proprietary algorithms or intellectual property; others impose liability frameworks that differ sharply across jurisdictions. For AI and robotics companies operating nationally, compliance quickly becomes unmanageable.

A company seeking to deploy autonomous warehouse robots, delivery systems or home assistants nationwide may face dozens of distinct safety, data, bias and reporting regimes.

Industry estimates suggest that compliance costs could rise dramatically, with startups disproportionately affected as scarce capital is diverted from research and development to legal overhead. Venture investment, highly sensitive to regulatory uncertainty, may shift to jurisdictions with clearer national rules.

The downstream effects ripple across sectors. Autonomous logistics systems face inconsistent approval standards, fragmenting supply chains. Healthcare robotics encounters varying privacy and bias rules that delay adoption despite workforce shortages. Manufacturers integrating robotics into reshoring efforts face barriers to interstate data sharing and certification. The cumulative effect is balkanization, undermining scale, efficiency and national competitiveness.

Ironically, this fragmentation risks producing the opposite of its intended effect. Rather than protecting consumers and workers, it may drive innovation offshore, concentrate deployment in a few permissive states or advantage foreign competitors operating under unified national regimes.

China's Unified National Strategy: The Existential Competitor

In sharp contrast to the fragmented approach of the U.S., China's centralized national strategy exemplifies how regulatory cohesion and government-backed investment can propel rapid advancements in robotics, serving as both a cautionary tale and an existential competitive threat.

Through centralized planning, coordinated investment and regulatory cohesion, China has rapidly advanced its robotics sector, particularly in humanoid systems. Government-backed funding, subsidies and national industrial policy have enabled Chinese firms to scale production, reduce costs and deploy robots across factories, services and public infrastructure without provincial regulatory conflict.[10]

Major Chinese robotics firms are already producing and deploying humanoid systems at scale, with plans to expand output dramatically over the next several years.[11] Production costs continue to fall as supply chains are optimized and manufacturing volumes increase.[12] Demonstrations that once appeared theatrical have transitioned into early but expanding commercial deployments across industries and services.[13]

This unified ecosystem positions China to fill labor gaps domestically and abroad, export cost-competitive robots, and set de facto global standards. If the U.S. remains mired in

regulatory fragmentation, China could replicate its electric vehicle trajectory in robotics, achieving dominance within a few years and challenging U.S. firms both at home and internationally.

The implications extend beyond economics. Advanced robotics and AI are dual-use technologies with clear national security implications. Supply chain dependence, industrial capacity and technological leadership all intersect in this domain.

Federal Preemption as a Strategic Response

The administration's recent policy actions reflect growing recognition of these stakes. The December executive order establishes mechanisms to challenge state laws that conflict with federal AI priorities, emphasizing the role of AI leadership in economic and national security. Public statements and agency planning documents suggest that robotics will soon be folded into this framework, with a dedicated national strategy forthcoming.

Federal preemption provides the legal mechanism to implement this vision. The preemption of state regulatory authority has long been used to ensure uniform national standards in areas such as telecommunications, aviation and other critical areas implicating interstate commerce. In each instance, federal coherence enabled scale, innovation and global leadership while still allowing robust and meaningful regulation.

Applied to AI and robotics, preemption would not eliminate safeguards. Rather, it would replace conflicting state rules with consistent national standards for safety, transparency, accountability and ethics. Regulators could build upon existing frameworks, such as the National Institute of Standards and Technology's AI Risk Management Framework, extending them to embodied systems while preserving strong and important consumer and civil rights protections.

Sector-Specific Opportunities Unlocked by Preemption

The benefits of preemption would be felt across sectors. Manufacturing could accelerate the deployment of highly automated facilities, supporting reshoring and supply chain resilience. Healthcare providers could adopt robotic surgery and care systems under clear national standards, expanding access while maintaining safety and privacy.

Logistics firms could deploy autonomous fleets nationwide, reducing costs, emissions and congestion. Defense and critical infrastructure would benefit from scalable, secure AI robotics systems aligned with national security priorities.

Historical precedent is instructive. Federal preemption in telecommunications enabled nationwide networks and global leadership. Uniform e-commerce rules allowed digital platforms to scale rapidly. A similar approach in AI and robotics could unlock comparable gains.

Counterarguments, Rebuttals and a Balanced Path Forward

Critics of federal preemption argue that it would undermine states' traditional role as laboratories of democracy, replacing localized regulatory control with a one-size-fits-all federal regime that may insufficiently address concerns such as algorithmic bias, privacy, consumer safety and civil rights — particularly under an administration viewed as prioritizing rapid industry growth over protective safeguards.

Advocacy organizations, including Public Citizen, have condemned the Trump executive order as a "dangerous" handout to Big Tech donors, labeling it an act of executive overreach that threatens to invalidate bipartisan state laws safeguarding against discriminatory AI outcomes and unchecked data collection.[14]

Some legal scholars suggest the order is legally vulnerable absent comprehensive congressional action and may face constitutional challenges based on anticommandeering principles under the U.S. Supreme Court's 2018 decision in *Murphy v. NCAA*.[15] They further point to state initiatives — ranging from New York's AI ethics commissions to Colorado's risk-assessment frameworks and Utah's disclosure rules — as evidence that decentralized regulation can respond more nimbly to address evolving technological threats than centralized national policymaking.

While these concerns merit consideration, they cannot outweigh the costs of national regulatory fragmentation at this critical moment in worldwide technological competition. Critics not only fail to appreciate the dislocating effect of inconsistent and conflicting regulations, but also underestimate the potential for a coherent national framework that promulgates robust safeguards in clearly announced rules while preserving enforcement roles for states and localities to implement those national standards.

Even more troubling, the absence of a coherent national approach poses an existential risk to U.S. leadership in AI, robotics and ultimately, artificial general intelligence. Domestic firms face a regulatory maze that diverts resources from innovation to compliance, slowing iteration and deployment. In a global race where speed and scale matter, internal domestic friction becomes a self-imposed strategic liability.

To move forward, Congress should act swiftly to enact bipartisan legislation codifying preemption with ethical guardrails, involving ethicists, industry leaders and civil society in policymaking. Agencies like the Commerce Department could lead multistakeholder working groups to define standards that promote augmentation, protect vulnerabilities and drive inclusive growth, ultimately positioning the U.S. as the ethical and technological front-runner in the global artificial general intelligence and robotics arena.

A Call for Unified Action

Federal preemption offers a unified front at a decisive moment, essential for safeguarding America's economic edge in AI and robotics against global rivals. By dismantling internal barriers, it harnesses trillions of dollars in potential, secures high-skilled jobs through human augmentation, and defends technological sovereignty.

As competition intensifies in 2026, delay risks irreversible decline while national uniformity holds the promise of enduring prosperity.

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[1] Goldman Sachs Glob. Inv. Rsch., *The Potentially Large Effects of Artificial Intelligence on*

Economic Growth, at 3–5 (Mar. 26, 2024) (projecting that generative AI could materially accelerate labor-productivity growth and become a dominant contributor to GDP growth relative to traditional demand-side drivers) (located at <https://www.goldmansachs.com/insights/pages/gs-research/the-potentially-large-effects-of-artificial-intelligence-on-economic-growth.html>); see also Mary C. Daly, Will AI Boost Productivity Growth?, Fed. Rsrv. Bank of S.F. Econ. Letter No. 2024-11, at 1–2 (Apr. 8, 2024) (stating that AI-driven productivity growth could become a "meaningful driver of U.S. economic expansion" as other growth sources moderate) (located at <https://www.frbsf.org/research-and-insights/publications/economic-letter/2024/04/will-ai-boost-productivity-growth/>); Int'l Monetary Fund, World Economic Outlook: Navigating Global Divergences 25–27 (Oct. 2024) (noting that advanced economies face structural slowdowns in consumption, housing, and manufacturing, increasing reliance on productivity-enhancing technologies).

[2] See, e.g., Bureau of Econ. Analysis, Private Fixed Investment in Intellectual Property Products, Nat'l Income & Prod. Accts. tbl. 5.3.5 (2024–2025) (showing sharp increases in software, R&D, and data-processing investment beginning in late 2023) (located at <https://www.bea.gov/data/investment-fixed-assets>); Fed. Rsrv. Bank of Richmond, AI Investment and the U.S. Economic Outlook, Econ. Brief No. 24-12, at 2–4 (Dec. 2024) (attributing a growing share of recent U.S. GDP growth to AI-related investment in data centers, semiconductors, and cloud infrastructure); Goldman Sachs Glob. Inv. Rsch., AI, Data Centers, and the New Capex Cycle 1–3 (Aug. 2024) (describing hyperscale data-center construction and semiconductor investment as a "structural pillar" of U.S. economic growth). Recent U.S. growth has increasingly been linked to AI-related capital expenditures, including software, R&D, data centers, and semiconductor infrastructure. See Bureau of Econ. Analysis, Nat'l Income & Prod. Accts. tbl. 5.3.5 (2024–2025); Goldman Sachs Glob. Inv. Rsch., AI, Data Centers, and the New Capex Cycle, at 1–3 (Aug. 2024). Government and multilateral analyses identify this digital-infrastructure buildout as a source of U.S. economic resilience amid global uncertainty. See U.S. Dep't of the Treasury, Macroeconomic Resilience in an Era of Geopolitical Fragmentation, at 6–9 (2024); OECD, Digital Infrastructure and Economic Resilience in Advanced Economies, at 10–12 (2024).

[3] China has pursued a coordinated, state-directed approach to scaling both AI and "embodied intelligence"/humanoid robotics, including central industrial policy prioritization, standards-setting, and large capital commitments by state-aligned firms. See, e.g., Reuters, China's Xpeng May Invest Up to \$13.8 Billion in Humanoid Robots, State Media Reports (Mar. 11, 2025) (reporting that Chinese policymakers have identified humanoid robotics as a strategic priority and that major firms are planning long-horizon investments at national scale) (located at <https://www.reuters.com/technology/chinas-xpeng-may-invest-up-138-billion-humanoid-robots-state-media-reports-2025-03-11/>); Paul Triolo, Embodied Intelligence: The PRC's Whole-of-Nation Push Into Robotics (Jamestown Found. Aug. 9, 2025) (describing a "whole-of-nation strategy" combining policy coordination, rapid deployment, and local experimentation to dominate intelligent robotics) (located at <https://jamestown.org/embodied-intelligence-the-prcs-whole-of-nation-push-into-robotics/>); TechNode, China Unveils Humanoid Robot Standards Committee With Members From Unitree, Zhiyuan, Xiaomi, Huawei, ZTE and XPeng (Nov. 25, 2025) (reporting MIIT-linked establishment of a national humanoid robot standardization body reflecting centralized coordination and ecosystem-building) (located at <https://technode.com/2025/11/25/china-unveils-humanoid-robot-standards-committee-with-members-from-unitree-zhiyuan-xiaomi-huawei-zte-and-xpeng/>); RAND Corp., Full Stack: China's Evolving Industrial Policy for AI (June 26, 2025) (explaining that China's AI industrial policy accelerates progress through state support for research, talent, subsidized compute, and applications) (located at <https://www.rand.org/pubs/perspectives/PEA4012->

1.html).

[4] See Ensuring a National Policy Framework for Artificial Intelligence, Exec. Order No. _____, 90 Fed. Reg. ____ (Dec. 11, 2025) (directing federal agencies—incl. Commerce—to identify and challenge "onerous" state AI laws and pursue a uniform national framework) (located at <https://www.whitehouse.gov/presidential-actions/2025/12/eliminating-state-law-obstruction-of-national-artificial-intelligence-policy/> (last visited Jan. 28, 2026)); see also Trump Administration Reportedly Eyeing Executive Order on Robotics in 2026: Howard Lutnick Is "All In" on Accelerating Development, Stocktwits (Dec. 3, 2025) (reporting administration consideration of a robotics executive order in 2026 and describing interagency activity to accelerate robotics development) (located at <https://stocktwits.com/news-articles/markets/equity/trump-administration-all-in-robots-ai-push/cLIXAhoRE1W> (last visited Jan. 28, 2026)); White House Eyes "Robotics Executive Order" as Trump Administration Pivots to Hardware, Humanoids Daily (Dec. 5, 2025) (describing White House exploration of a national robotics strategy and an executive-order approach in 2026) (located at <https://www.humanoidsdaily.com/news/white-house-eyes-robotics-executive-order-as-trump-administration-pivots-to-hardware> (last visited Jan. 28, 2026)).

[5] See "Trump Administration Reportedly Eyeing Executive Order on Robotics in 2026: Howard Lutnick Is 'All In' on Accelerating Development," Stocktwits (Dec. 3, 2025) (quoting a Commerce Department spokesperson that the Administration is "committed to robotics and advanced manufacturing" because they are "central to bringing critical production back to the United States") (located at <https://stocktwits.com/news-articles/markets/equity/trump-administration-all-in-robots-ai-push/cLIXAhoRE1W> (last visited Jan. 28, 2026)); "Tech Jobs, Robots Are Lutnick's Vision for America's 'Manufacturing Renaissance,'" Axios (Apr. 3, 2025) (reporting Lutnick's public messaging that robotics/automation will be central to reshoring and industrial competitiveness) (located at <https://www.axios.com/2025/04/03/tech-jobs-robots-lutnick-manufacturing-renaissance> (last visited Jan. 28, 2026)); "White House Eyes 'Robotics Executive Order' as Trump Administration Pivots to Hardware," Humanoids Daily (Dec. 5, 2025) (describing the Administration's "physical AI"/robotics push in explicitly competitive terms—linking U.S. robotics policy to maintaining industrial competitiveness against China) (located at <https://www.humanoidsdaily.com/news/white-house-eyes-robotics-executive-order-as-trump-administration-pivots-to-hardware> (last visited Jan. 28, 2026)).

[6] Leading economic analyses project that artificial intelligence–driven automation and optimization could produce sustained productivity and output gains for the U.S. economy over the coming decade. See Jan Hatzius et al., *The Potentially Large Effects of Artificial Intelligence on Economic Growth*, at 3–6 (Goldman Sachs Glob. Econ. Analyst, Mar. 26, 2023) (modeling substantial long-run productivity and GDP gains from generative AI–enabled automation and innovation); Mary C. Daly, *Will AI Boost Productivity Growth?*, Fed. Rsrv. Bank of S.F. Econ. Letter No. 2024-11, at 1–2 (Apr. 8, 2024) (concluding that AI adoption could generate durable productivity gains if diffusion continues); Org. for Econ. Coop. & Dev., *The Impact of Artificial Intelligence on Productivity*, at 9–12 (2024) (finding that AI-driven automation and optimization can raise productivity across sectors but that benefits depend on effective deployment). Many economic institutions caution, however, that regulatory fragmentation or barriers that slow deployment could materially reduce these projected gains. See Org. for Econ. Coop. & Dev., *AI, Regulation, and Economic Growth*, at 14–18 (2024) (warning that inconsistent or restrictive regulatory environments may delay AI diffusion and dampen productivity effects); U.S. Council of Econ. Advisers, *Economic Report of the President*, at 219–22 (2025) (noting that regulatory uncertainty can slow adoption of productivity-enhancing technologies).

[7] McKinsey Global Institute: Jacques Bughin, Jeongmin Seong, James Manyika, Michael Chui & Raoul Joshi, Notes From the AI Frontier: Modeling the Impact of AI on the World Economy, at 2 (McKinsey Glob. Inst. Sept. 2018) (stating that "AI could potentially deliver additional economic output of around \$13 trillion by 2030") (located at <https://www.mckinsey.com/~media/mckinsey/featured%20insights/artificial%20intelligence/notes%20from%20the%20frontier%20modeling%20the%20impact%20of%20ai%20on%20the%20world%20economy/mgi-notes-from-the-ai-frontier-modeling-the-impact-of-ai-on-the-world-economy-september-2018.ashx>); see also PwC: The Macroeconomic Impact of Artificial Intelligence (Feb. 2018) at p.3 ("Our S-CGE model analysis suggests that global GDP could be up to 14% higher than this figure in 2030 as a result of AI – the equivalent of up to \$15.7 trillion.") (located at <https://www.pwc.co.uk/economic-services/assets/macro-economic-impact-of-ai-technical-report-feb-18.pdf>). On sectoral applications, McKinsey identifies (among others) predictive maintenance and anomaly detection in factory assembly lines; improved treatment precision from AI/robotics in healthcare; logistics route optimization improving fuel efficiency; and agricultural automation using sensors/analytics/robotics to "do more with less," including optimizing input use. See McKinsey Global Institute, Notes From the AI Frontier: Applications and Value of Deep Learning (Apr. 17, 2018) (under bullet "Predictive maintenance," explaining AI can "reduce downtime" and improve "production yield") (located at <https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontier-applications-and-value-of-deep-learning> (last visited Jan. 28, 2026)); McKinsey Global Institute, Notes From the AI Frontier: Applications and Value of Deep Learning (Apr. 17, 2018) (under bullet "AI-driven logistics optimization," stating AI can "optimize routing of delivery traffic" and improve "fuel efficiency") (located at <https://www.mckinsey.com/featured-insights/artificial-intelligence/notes-from-the-ai-frontier-applications-and-value-of-deep-learning> (last visited Jan. 28, 2026)); McKinsey & Co., Rewiring Maintenance With Gen AI (Feb. 6, 2025) (stating that a "gen AI copilot" can cut "unscheduled downtime by as much as 90 percent") (located at <https://www.mckinsey.com/capabilities/operations/our-insights/rewiring-maintenance-with-gen-ai> (last visited Jan. 28, 2026)); McKinsey & Co., Finding the Future of Care Provision: The Role of Smart Hospitals (May 31, 2019) (stating "AI, robotics, and other new technologies can improve treatment precision and dramatically decrease the probability of error") (located at <https://www.mckinsey.com/industries/healthcare/our-insights/finding-the-future-of-care-provision-the-role-of-smart-hospitals> (last visited Jan. 28, 2026)); Rob Bland, Vasanth Ganesan, Evania Hong & Julia Kalanik, Trends Driving Automation on the Farm (May 31, 2023) (stating next-generation technologies use "sensors, analytics, robotics" to help farmers "do more with less," and discussing optimizing input application "at what times and what rates"), McKinsey & Co (located at <https://www.mckinsey.com/industries/agriculture/our-insights/trends-driving-automation-on-the-farm> (last visited Jan. 28, 2026)); Lutz Goedde, Joshua Katz, Alexandre Menard & Julien Revellat, Agriculture's Connected Future: How Technology Can Yield New Growth, at 1 (McKinsey Ctr. for Advanced Connectivity & McKinsey Agric. Prac. Oct. 2020) (stating AI/analytics/sensors can "increase yields" and "improve the efficiency of water and other inputs") (located at <https://www.mckinsey.com/~media/McKinsey/Industries/Agriculture/Our%20Insights/Agricultures%20connected%20future%20How%20technology%20can%20yield%20new%20growth/Agricultures-connected-future-How-technology-can-yield-new-growth-F.pdf>).

[8] National Conference of State Legislatures reporting indicates that state lawmakers introduced "over 1,000 measures" on artificial intelligence in 2025, and that dozens of measures were enacted/adopted during the 2025 sessions. See Chelsea Canada, New Trends Emerge as States Refine AI Legislation, Nat'l Conf. of State Legislatures (Jan. 22,

2026) (stating "State legislators across the nation introduced over 1,000 measures on artificial intelligence in 2025") (located at <https://www.ncsl.org/state-legislatures-news/details/new-trends-emerge-as-states-refine-ai-legislation> (last visited Jan. 28, 2026)).

[9] Nat'l Conf. of State Legislatures, Artificial Intelligence 2025 Legislation (updated Dec. 2025) (listing all state-by-state AI enactments and legislative proposals, stating: "More and more states have introduced AI-related legislation over the last few years. In the 2025 legislative session, all 50 states, Puerto Rico, the Virgin Islands, and Washington, D.C., have introduced legislation on this topic this year. Thirty-eight states adopted or enacted around 100 measures this year.") (located at <https://www.ncsl.org/technology-and-communication/artificial-intelligence-2025-legislation> (last visited Jan. 28, 2026)); see also The Transparency Coalition, 2025 State AI Legislation Report: A guide to 73 new AI-related laws enacted in 27 states () (compiling "top states by number of new AI laws," and listing leaders as California (13), Texas (8), Montana (6), Utah (5), and Arkansas (5) for new AI-related laws in 2025) (located at https://static1.squarespace.com/static/6578d6032532c06f62ef47ce/t/6902563ddda9b9481548ea15/1761760829311/TCAI%2B2025%2BState%2BAI%2BLegislation%2BReport%2B10.29.2025.pdf?utm_source=chatgpt.com); Int'l Ass'n of Priv. Pros., California 2025 Legislative Wrap-Up: More Privacy and First-of-Its-Kind AI Laws Adopted (Jan. 7, 2026) (reporting that, in 2025, California Governor Gavin Newsom "signed ... seven artificial intelligence bills into law") (located at <https://iapp.org/news/a/california-2025-legislative-wrap-up-more-privacy-and-first-of-its-kind-ai-laws-adopted> (last visited Jan. 28, 2026)); Chelsea Canada, New Trends Emerge as States Refine AI Legislation, Nat'l Conf. of State Legislatures (Jan. 22, 2026) (describing California's enactment of SB 53 on frontier-model safety/transparency and SB 243 regulating companion chatbots) (located at <https://www.ncsl.org/state-legislatures-news/details/new-trends-emerge-as-states-refine-ai-legislation> (last visited Jan. 28, 2026)).

[10] China's central government has explicitly designated robotics and "embodied artificial intelligence" as priority industries and has supported their development through coordinated industrial policy, public funding, and subsidies. See Ministry of Industry & Information Technology (MIIT), Guiding Opinions on the Innovation and Development of Humanoid Robots (Nov. 2023) (PRC) (calling for accelerated large-scale production, cost reduction, and deployment of humanoid robots across industrial and service sectors under unified national guidance); see also United States–China Economic and Security Review Commission, Issue Alert: Humanoid Robots, at 9–10 (Oct. 10, 2024) (translation of Ministry of Industry and Information Technology, Guiding Opinion on the Innovation and Development of Humanoid Robots (Nov. 2, 2023), identifying industrial goals and strategic priorities set by MIIT, and stating "The Chinese government has thrown its weight behind developing humanoid robots, as it has previously for other critical emerging technologies, with the aim of expanding its role in the global market.") (located at https://www.uscc.gov/sites/default/files/2024-10/Humanoid_Robots.pdf); Reuters, China Bets on Humanoid Robots to Boost Productivity as Workforce Shrinks (Jan. 16, 2024) (reporting extensive state backing, subsidies, and national planning to scale robot manufacturing and reduce unit costs) (located at <https://www.reuters.com/world/china/china-bets-humanoid-robots-boost-productivity-workforce-shrinks-2024-01-16/>); OECD, Industrial Policy and the Rise of Robotics in China, at 8–12 (2024) (explaining that centralized industrial policy and national standards enable rapid scale-up and deployment of robotics with minimal subnational regulatory friction); Ctr. for Strategic & Int'l Studies, China's Robotics Push and the Role of the State (May 2024) (describing how state financing and uniform regulatory authority allow Chinese firms to deploy robots nationwide across factories, logistics, and public services without provincial-level barriers).

[11] See Iris Dengin, "Chinese Firms Outpace U.S. Rivals in 2025 Humanoid Robot Shipments, as AgiBot Takes Lead," South China Morning Post (Jan. 9, 2026) (reporting that Shanghai-based AgiBot shipped over 5,000 humanoid robots in 2025, capturing nearly 38 % of global unit shipments and leading multiple Chinese robotics firms in scaling production (located at <https://www.scmp.com/tech/tech-trends/article/3339346/chinese-firms-outpace-us-rivals-2025-humanoid-robot-shipments-agibot-takes-lead>); see also "China's AI-Powered Humanoid Robots Aim to Transform Manufacturing," Reuters (May 13, 2025) (describing humanoid robots being deployed in industrial and warehouse settings as part of efforts by firms like AgiBot and Unitree to operationalize robots beyond prototypes) (located at <https://www.reuters.com/world/china/chinas-ai-powered-humanoid-robots-aim-transform-manufacturing-2025-05-13>).

[12] See, e.g., "Humanoid Robots Global Market Report 2026–2040, with Detailed Profiles of Leading Humans Robot Manufacturers and Technology Developers," Yahoo Finance GlobalNewswire (Oct. 28, 2025) (noting that the "humanoid robotics sector is moving rapidly from prototype to commercial deployment, driven by major funding, falling production costs, and broader industrial adoption"; "China's robotics sector has seen remarkable financing activity, with 610 investment deals totaling ...\$7 billion...in the first nine months of 2025," and "cost barriers are collapsing faster than projected. Chinese manufacturer Unitree shocked the market in July 2025 by launching its R1` humans at just \$5,900 - a price point previously thought impossible for years") (located at <https://finance.yahoo.com/news/humanoid-robots-global-market-report-153700568.html>).

[13] See "China's AI-Powered Humanoid Robots Aim to Transform Manufacturing," Reuters (May 13, 2025) (reporting that humanoid robots are in use folding clothes, making sandwiches, and opening doors in a Shanghai warehouse, illustrating a shift from demonstration environments into operational tasks in industrial settings) (located at <https://www.reuters.com/world/china/chinas-ai-powered-humanoid-robots-aim-transform-manufacturing-2025-05-13>); see also "AgiBot Claims Top Spot in Global Humanoid Robot Shipments in 2025 With More Than 5,100 Units Delivered," Robotics & Automation News (Jan. 21, 2026) (noting that AgiBot's 2025 deliveries span sectors including industrial manufacturing, logistics, security, entertainment, and hospitality, showing expanding commercial deployment beyond pure demonstration) (located at <https://roboticsandautomationnews.com/2026/01/21/agibot-claims-top-spot-in-global-humanoid-robot-shipments-in-2025-with-more-than-5100-units-delivered/98223>).

[14] See Public Citizen, "Trump Grants His Greedy Big Tech Buddies' Christmas Wish With Dangerous AI Preemption EO" (Dec. 11, 2025) (statement by Public Citizen Co-President Robert Weissman condemning President Trump's AI preemption executive order as a "reward to Big Tech... at the expense of public safeguards" that threatens to override state laws and federalist principles) (located at <https://www.citizen.org/news/trump-grants-his-greedy-big-tech-buddies-christmas-wish-with-dangerous-ai-preemption-EO/> (last visited Jan. 28, 2026)); see also Public Citizen, "Expected Trump AI Executive Order Does the Bidding of Big Tech, Public Citizen Says" (Nov. 19, 2025) (quoting Public Citizen senior advocates describing the anticipated executive order as doing "the bidding of Big Tech" and criticizing it for undermining state safeguards and accountability) (located at <https://www.citizen.org/news/expected-trump-ai-executive-order-does-the-bidding-of-big-tech-public-citizen-says/>(last visited Jan. 28, 2026)).

[15] See *Murphy v. NCAA*, 584 U.S. 453, 462–63 (2018) (holding that the anti-commandeering doctrine prohibits the federal government from directly controlling or

dictating state legislative or regulatory action); see also Cong. Rsch. Serv., *Federal Preemption: A Legal Primer* 18–21 (updated Dec. 2024) (explaining that preemption generally requires congressional authorization and that executive action alone cannot compel states to repeal or refrain from enforcing their own laws); Mila Sohoni, *The Trump Administration and the Constitutional Limits of Executive Preemption*, 134 *Harv. L. Rev. F.* 95, 98–103 (2020) (arguing that executive-branch efforts to displace state law without clear congressional authorization are vulnerable under anti-commandeering and separation-of-powers principles).