

**Response to Request for Information: 2025 National AI R&D Strategic Plan
ID No. NSF-2025-OGC-0001**

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May 29, 2025

The United States is at a critical point in the global artificial intelligence landscape. Guided by President Donald J. Trump Executive Order 14179, *Removing Barriers to American Leadership in Artificial Intelligence* (signed January 23, 2025), continued federal investment in innovative research and development is crucial for maintaining national leadership. Private-sector priorities often lean towards immediate profits rather than novel advancements, which can leave significant gaps in long-term innovation. History, such as government-backed research in neural networks, shows how vital federal leadership is in driving technological progress.

We are putting forward a strategic framework for the 2025 National AI R&D Strategic Plan. With federal resources, we can advance pioneering technologies, bolster national security, build public trust, and get the USA workforce ready. This will ensure the American economy can thrive in a competitive global environment. Through collaborative models and focused initiatives, we can uphold ethical principles while positioning the United States as a leader in artificial intelligence.

1. Strategic Recommendations

We propose seven key priority areas for federal artificial intelligence research and development. Each initiative targets gaps in private-sector investment, aligns with national objectives, and advances technological and ethical leadership.

1.1 Advancing Next-Generation AI Architectures

Investing in new and innovative artificial intelligence architectures—like neuromorphic computing, quantum-inspired algorithms, and neurosymbolic models—will establish the United States as a leader in transformative technology. These systems can provide sustainable and efficient solutions for defense, healthcare, and scientific discovery. By backing innovation in areas that industry might overlook, federal efforts can strengthen

the American economy and boost national security with reliable applications, such as lightweight systems for military operations or medical diagnostics.

1.2 Creating a Public Foundation Model Ecosystem

By establishing a national program for public-domain foundation models, datasets, and computational infrastructure, we can broaden access to advanced artificial intelligence. Open datasets with clear origins, tools for understanding models, and multilingual systems designed for non-commercial use will empower academia, startups, and public agencies. This ecosystem will lessen the USA dependence on proprietary technologies, strengthen sectors like healthcare and education, and reinforce American sovereignty in the global tech landscape.

1.3 Developing Systems for AI Oversight

Researching meta-governance systems that can monitor and manage artificial intelligence in real time will improve safety in high-stakes applications. These systems, designed to check outputs, enforce operational limits, and keep auditable records, will support secure deployment in areas like finance, defense, and justice. By improving oversight capabilities, the United States can build global confidence in its technologies, adopting trust and reliability across industries.

1.4 Strengthening National Security and Infrastructure

Developing artificial intelligence for national security and infrastructure protection will safeguard the American economy from cyber threats and physical disruptions. Systems designed to detect threats, protect critical infrastructure, and coordinate agency responses will enhance the USA resilience. These advancements will support secure urban environments and reliable public services, reinforcing national stability and public trust in technology.

1.5 Accelerating Scientific Discovery Through AI Networks

Creating a network of AI-driven research centers, integrated with national laboratories and universities, can revolutionize scientific inquiry. Systems tailored for quantum simulation, materials science, and medical research, combined with interdisciplinary training, will advance national priorities. This initiative will encourage innovation in defense and economic sectors, positioning the United States as a global leader in scientific progress.

1.6 Supporting Agentic and Embodied AI

Investing in multi-modal, embodied artificial intelligence systems that have real-world capabilities will strengthen national resilience. Research in robotics, digital twins, and autonomous systems can support logistics, disaster response, and healthcare. By developing technologies for complex environments, the United States can enhance

supply chain stability and public welfare, leading the way in automation for both defense and civilian applications.

1.7 Establishing Trustworthy AI Standards

Creating a federal certification framework for artificial intelligence systems will ensure their safety and reliability across various applications. Standards that include adversarial testing, human oversight, and real-time monitoring will build public trust and support ethical innovation. By leading the development of global standards, the United States can strengthen its technological influence and competitiveness, encouraging the worldwide adoption of American systems.

1.8 Preparing the Workforce for AI-Driven Economies

Developing artificial intelligence tools for workforce training and labor market forecasting will equip Americans for evolving industries. Customized educational platforms and predictive models can help people from diverse communities develop new skills. These initiatives will enhance the American talent pool, support equitable economic opportunities, and maintain the USA national competitiveness in a global market.

2. Innovative Collaboration Models

Strategic partnerships amplify the impact of federal artificial intelligence research

2.1 National AI Research Consortium

A federally supported consortium that brings together academia, industry, and government laboratories can accelerate transformative research. By integrating diverse expertise, this initiative can drive technological advancements that benefit sectors like defense and healthcare. Such collaborative efforts will reinforce the United States' leadership in AI innovation.

2.2 Regional AI Innovation Hubs

Establishing research hubs in underserved regions can expand technological access and support local economies. Centers focused on regional challenges, such as agriculture or healthcare, can create opportunities for job growth and innovation. This approach advances inclusive progress, strengthening the American economy through community-driven solutions.

2.3 Public-Private Testing Environments

Collaborative testing environments, developed with industry under federal oversight, will enable the safe deployment of artificial intelligence systems. Facilities modeled on military or urban settings can ensure reliable applications for critical sectors. These partnerships

enhance national security and economic competitiveness by advancing trusted technologies.

3. Addressing Overlooked Opportunities

We have identified the following areas where federal investment can make a significant impact:

- Developing technologies to neutralize foreign advancements in surveillance or disinformation will strengthen national security.
- Certifying American systems for ethical compliance will enhance our global influence and market competitiveness.
- Applying artificial intelligence to agriculture, telemedicine, and connectivity can support economic growth in underserved areas.
- Creating systems to detect and counter propaganda will help preserve democratic stability.

We have offered a strategic roadmap for the 2025 National AI R&D Strategic Plan. Investments in advanced architectures, public models, oversight systems, national security, scientific networks, embodied technologies, trustworthy standards, and workforce preparation can address gaps often left by the private sector. Collaborative models, including a national consortium, regional hubs, and testing environments, will amplify this impact. These initiatives will position the United States to lead in artificial intelligence, thereby strengthening economic prosperity, national security, and societal well-being, as envisioned by Executive Order 14179.