

# PUBLIC SUBMISSION

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**Comment On:** NSF-2025-OGC-0001-0001  
Request for Information: Development of a 2025 National Artificial Intelligence Research and Development Strategic Plan

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## Submitter Information

**Organization:** Amazon.com, Inc.

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## General Comment

See attached file(s)

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## Attachments

Amazon Response - National AI RD Strategic Plan RFI



**Comments of Amazon**  
**Request for Information on the Development of an Artificial Intelligence (AI) Action Plan**

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Amazon welcomes the opportunity to respond to the Office of Science and Technology Policy's (OSTP) February 6, 2025 [request for information](#) on issues related to the revision of the National AI Research and Development (R&D) Strategic Plan.

Over the last 25 years, Amazon has developed and deployed state of the art AI and machine learning models to power customer experiences. This includes customer-facing services and internal operations that personalize the shopping experience on [Amazon.com](#), the AI-powered robots that optimize order fulfillment in our warehouses, and Amazon Web Services (AWS) building generative AI capabilities that transform customer experiences in industries across the globe.

At Amazon, we think about AI across the three layers of our generative AI stack: the bottom layer, which provides the tools for building and training large language models (LLMs) and other foundation models (FMs); the middle layer, which provides access to all the models along with tools you need to build and scale generative AI applications; and the top layer, which includes applications that use LLMs and other FMs to make work stress-free by writing and debugging code, generating content, deriving insights, and taking action. Each layer is important to building secure and transformative generative AI applications. AWS chips like Trainium and Inferentia also play a key role in the AWS AI stack, offering specialized hardware to optimize machine learning workloads.

Amazon invests heavily in research to advance the state of AI science. We have collaborated with over 500 universities around the world to innovate in foundational technology areas such as AI, quantum computing, robotics, cloud computing, semiconductors, sustainability, hardware, healthcare, power, and other topics. Given recent advances in AI, we see a unique opportunity to use AI to accelerate scientific discovery and product development in many of these foundational technology areas. As examples of Amazon's research initiatives, in 2025, we launched the \$110 million Build on Trainium program to rapidly innovate on AI accelerator chip technology and expand compiler and hardware expertise in academia. We also developed the \$25 million Cross-Pacific AI Initiative, in collaboration with the University of Washington and the University of Tsukuba in Japan. And, last year, AWS launched the [Generative AI Impact Initiative](#)—a two-year, \$50 million investment designed to help public sector organizations deploy AI to help meet their missions.

Within Amazon, our team of scientists engage in cutting-edge research across a range of fields, including machine learning, conversational AI, robotics, quantum computing, and more. Much of

this research, along with resources and tools for researchers, is publicly available at [www.amazon.science](http://www.amazon.science).

As the RFI indicates, the federal government plays a critical role in AI research and development, and can take steps to ensure that scientific advancement continues to advance at the pace necessary to maintain U.S. leadership on AI. Below, we offer considerations for the administration as it revises its R&D Strategic Plan.

### **Standards development**

Previous iterations of the National AI R&D Strategic Plan have included support for the development of technical standards. We believe this continues to be an appropriate part of a national strategy. As AI capabilities continue to advance, internationally-recognized standards provide the foundation for organizations to flexibly plan, manage, and evaluate AI systems while ensuring public trust across jurisdictions. Building on the strong foundation established by Executive Order 13859 in 2019, which prioritized American leadership in AI standards development, continued work on clear and effective risk-based standards remains essential as AI technology evolves.

To maintain this momentum, U.S. government agencies should play an active role in standards organizations and/or articulate their goals while maintaining strong collaboration with industry partners. This public-private cooperation promotes standards that are both practical and balanced, incorporating interested stakeholder perspectives while supporting U.S. technological leadership. Federal agencies should ensure that international standards address their key operational priorities, which may include security, testing, metrics, and physical safety, while remaining flexible enough to accommodate rapid technological advancement and promote innovation.

### **Key research investment**

We propose that the government prioritize the below long-term, fundamental research areas in its R&D efforts.

1. **AI for Information Security:** AI has transformed the security landscape, offering more performant capabilities to detect, block, and respond to physical, digital, and cloud-based threats. We see additional opportunity for generative AI, and more recently, agentic AI, to build systems that are more resistant to manipulation attempts. Similarly, as the use of AI technologies becomes even more pervasive, securing complex AI systems becomes critical to the US economy.
2. **Agentic AI:** Agentic AI research that incorporates and continuously learns from multimodal data, such as vision, language, and text, is important to achieving AI's potential with software generation, business automation, scientific discovery, and other applications that would bolster U.S. AI leadership. Retrieval across structured and unstructured data, human-computer interfaces, reward models, programmatic and learned verifiers, and automated reasoning and neuro-symbolic techniques for output synthesis and verification are a few examples of research topics that would advance the development of agentic AI.

3. **Hardware Development:** Fundamental to cost-efficient, performant AI is the specialized computing hardware that empowers deep learning and large language model workloads. To ensure continuous improvement of AI, we need to advance novel materials, advanced packaging, memory technologies, and efficient semiconductor manufacturing, among many other topics.
4. **Industry-Specific Research:** Research in the application of AI to industry sectors is paramount to harnessing the promise of AI. AI research to automate software development, finance systems, business productivity and cost optimization, and scientific discovery in healthcare and life sciences, materials science, and sustainability will ensure advances in AI promote economic growth.
5. **Energy Efficient AI:** We would urge the administration to focus on spurring innovation in AI architectures and training and inference methodologies with the goal of making AI processes more energy efficient.
6. **Power:** In order to preserve U.S. leadership in generative AI and emerging technologies, the U.S. must ensure we have the electric capacity to meet our needs, including by advancing energy generation (through nuclear and alternative sources), grid-scale and portable energy storage (for example, in development of advanced batteries, thermal energy storage, mechanical storage, power-to-gas, and other technologies), and energy efficiency (through hardware optimization, algorithm design, and system-level architecture). Supporting research and manufacturing for these research areas will support state-of-the-art data center, edge computing device, and home energy requirements.

Amazon would be pleased to engage in further detail on any of the above as the administration develops its strategic plan.

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