FACT SHEET

AI IMPACTS:
Powering Discovery, Security and Opportunity

ARTIFICIAL INTELLIGENCE AND AMERICAN INNOVATION

For decades, the U.S. National Science Foundation has fueled AI research that powers everyday technologies and drives discovery, strengthens national priorities and keeps the U.S. at the forefront of innovation — from digital assistants like Alexa and Siri to Face ID, image recognition and chatbots. As the federal government's primary funder of foundational, nondefense AI research, NSF supports the science, infrastructure and workforce behind U.S. leadership in AI.

Guided by federal AI initiatives and administration priorities, NSF is expanding national AI infrastructure, accelerating real-world applications and preparing a future-ready workforce through programs like the NSF-led National AI Research Resource (NAIRR) and National AI Research Institutes to help shape a forward-looking national AI strategy and prepare a future-ready workforce. NSF advances critical technologies, expands national AI infrastructure, strengthens workforce development and accelerates real-world applications.

HOW NSF MAKES AI WORK

NSF invests in foundational ideas and tools that enable AI innovation:

- **Algorithms and learning systems:** Supporting research into AI systems that learn, adapt and improve, such as those used in everyday tools like voice assistants, navigation apps and fraud detection.
- **Data foundations:** Improving access to high-quality, AI-ready datasets to support reliable and scalable AI that improves critical applications such as medical diagnosis, language translation and image recognition.

AI research infrastructure: Scaling shared national AI capabilities through NSF initiatives such as NAIRR, AI-ready test beds, AI Research Institutes, National Deep Inference Fabric, and the Open Multimodal AI Infrastructure to Accelerate Science — expanding access to tools, models, data, experimentation environments and high-performance computing and cloud resources that enable researchers nationwide to tackle challenges in health care, transportation, manufacturing and smart technologies.

AI-ready workforce: Building a nationwide AI talent pipeline through NSF programs and initiatives such as Advanced Technological Education, Experiential Learning for Emerging and Novel Technologies, Advancing Education for the Future AI Workforce, and recent NSF initiatives expanding K-12 AI education, teacher training and career pathways. Together, these investments form a national AI ecosystem that advances discovery, economic competitiveness and national security.

FAST FACTS

NSF investments represent roughly **25%** of federal support for AI research at U.S. colleges and universities, alongside more than **$200 million** in 2025 funding supporting about **400** AI-focused startups.

AI IN ACTION

NSF-supported research, including through AI Institutes, advances priority areas identified in the national AI strategy:

- **Foundational AI:** Advancing core AI methods for more capable, reliable and widely applicable AI systems.
- **Critical infrastructure and systems:** AI-driven optimization across energy, supply chains, manufacturing, chip design, networks and communications.
- **Cybersecurity:** AI-enabled protection of data, networks and critical infrastructure.
- **Scientific discovery:** Accelerating breakthroughs across biology, chemistry, materials science, physics and astronomy.
- **Robotics and human-AI systems:** Improving health care, disaster response and human decision-making.
- **Education and workforce:** Expanding AI learning, training and workforce pathways.

PREPARING THE AI WORKFORCE

People are central to AI. NSF invests in education, training and workforce development — along with access to tools and mentorship — to expand opportunity and ensure talent nationwide can contribute to AI-driven advances. NSF supports:

- **Nationwide programs** for students and researchers at all career stages.
- **Interdisciplinary initiatives** connecting AI, computing, engineering, social sciences and education.
- **Efforts that expand availability** of cutting-edge AI infrastructure across America.
- **Workforce pathways** that prepare researchers and practitioners to develop and deploy AI.
- **Experiential learning programs** offering hands-on experience with AI across a range of applications

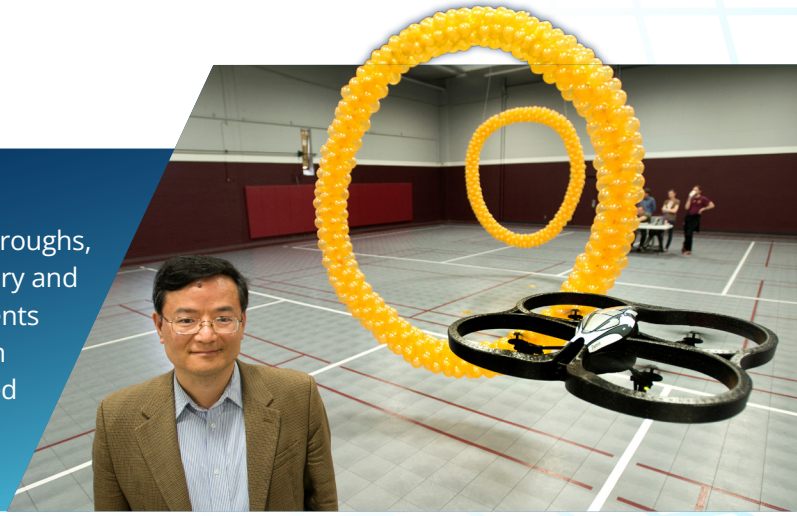
STRENGTHENING AMERICAN SCIENCE AND TECHNOLOGY

NSF's investments help:

- **Deliver world-class research infrastructure:** Expanding computing, networking and data systems for AI-driven science nationwide.
- **Build the workforce of the future:** Training students, educators and researchers in AI and priority areas such as quantum science, biotechnology and advanced manufacturing.
- **Support AI entrepreneurship and translation:** Moving AI breakthroughs from research to real-world applications through startups and NSF Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs.
- **Strengthen America's S&T ecosystem:** Strengthen the science and technology ecosystem: Fostering partnerships across academia, industry, startups, nonprofits and government.
- **Ensure leadership in critical technologies:** Advancing AI alongside biotech, clean energy, advanced communications, microelectronics and space technologies.
- **Explore new frontiers:** Enabling AI-driven discovery across Earth systems, oceans, polar regions and space.
- **Advance health, security and energy dominance:** Driving innovation that supports economic growth, national resilience and global competitiveness.
- **Accelerate translation:** Moving innovations from AI research to real-world impact.

LOOKING AHEAD

From everyday technologies to transformative scientific breakthroughs, NSF-supported AI research expands knowledge, powers discovery and strengthens American security and prosperity — while investments in foundational research, infrastructure, translational innovation and partnerships, and workforce development ensure the United States remains competitive, secure and prepared to meet the opportunities of the AI era.



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