



The government's AI revolution GAINS MOMENTUM

Agencies are ramping up their use of artificial intelligence for mission imperatives that seek to improve all aspects of society

PREVIOUSLY THE STUFF OF SCIENCE FICTION,

artificial intelligence is becoming more widespread thanks to a convergence of technology advances and government demand. AI can make sense of structured and unstructured data more quickly and effectively than humans ever could. It augments what people can accomplish, meaning agencies can tackle big, complex challenges faster and more effectively.

The federal government created the National Security Commission on AI in 2018 to make recommendations on how to advance the development of AI and related technologies for addressing national security and defense needs. The independent, bipartisan group of technologists, national security professionals, business executives and academic leaders released its final report in March.

"Americans have not yet grappled with just how profoundly the [AI] revolution will impact our economy, national security and welfare," the report states. "Much remains to be learned about the power and limits of AI technologies. Nevertheless, big decisions need to be made now to accelerate AI innovation to benefit the United States and to defend against the malign uses of AI."

The 756-page report includes dire warning about the U.S. falling behind adversaries that

are already using AI to spread disinformation, hone cyberattacks and gain a technological advantage on the battlefield. It also offers comprehensive recommendations for boosting AI development in the U.S. and emphasizes AI's vast potential for good.

Experts say the use of trustworthy, reliable AI across government is essential to ensuring the public's and agencies' confidence in the technology and its outcomes. That mindset applies to all aspects of AI – including capturing and annotating the right data, training machine learning models, and updating models when the data changes. Agencies must be able to explain what the models are doing every step of the way while also ensuring that AI tools are constantly learning and getting "smarter" and more effective.

Deputy Defense Secretary Kathleen Hicks issued a memo in May that reaffirms DOD's commitment to using AI in a way that is responsible, equitable, traceable, reliable and governable. "As the department develops, procures and deploys AI, these principles will be implemented not only in technology but also in enterprise operating structures and organizational culture," the memo states.

On the civilian agency site, the National Institute of Standards and Technology's website notes that AI "is being used in genomics, image and video processing,

materials, natural language processing, robotics, wireless spectrum monitoring and more" and adds that "these technologies must be developed and used in a trustworthy and responsible manner." To that end, NIST is conducting fundamental and applied AI research, evaluating the technical characteristics of trustworthy AI, and leading development of technical standards that promote innovation and trust in AI systems.

Boosting AI adoption through research and education

In a recent survey of FCW readers, 60% of respondents said the biggest obstacle to using AI was a lack of employees with the right skill set, followed closely by budget constraints (54%) and legacy technology that doesn't support or integrate with AI (42%).

Fortunately, government leaders are looking for ways to facilitate AI adoption. The General Services Administration's AI Center of Excellence seeks "to develop AI solutions that address unique business challenges agency-wide. The team provides strategic tools and infrastructure support to rapidly discover use cases, identify applicable artificial intelligence methods, and deploy scalable solutions across the enterprise."

In June, the Biden administration established a task force that will create a

AI by the numbers

47%

FCW survey respondents who said their agencies are using AI-based tools for data analysis

50%

Government organizations that will establish formal accountability structures for data sharing by 2023

300

Robotic process automation solutions in the federal RPA Use Case Inventory

\$40 billion

National Security Commission on AI's proposed investment to expand and democratize federal AI research and development

Sources: Digital.gov, FCW, Gartner, National Security Commission on AI

blueprint for the National AI Research Resource (NAIRR), as specified in the National AI Initiative Act of 2020. The White House described NAIRR as “a shared research infrastructure providing AI researchers and students across all scientific disciplines with access to computational resources, high-quality data, educational tools and user support” with the goal of spurring AI innovation and economic prosperity.

The National Science Foundation recently announced that it was adding 11 National AI Research Institutes to the seven institutes NSF funded in 2020. That brings the agency's investment to \$220 million across 40 states and the District of Columbia. NSF's announcement states that the institutes focus on a range of advances, including “helping older adults lead more independent lives and improving the quality of their care; transforming AI into a more accessible ‘plug-and-play’ technology; creating solutions to improve agriculture and food supply chains;... and supporting underrepresented students in elementary to post-doctoral STEM education to improve equity and representation in AI research.”

Several state governments have also launched AI policy initiatives. For example, Vermont's AI Task Force issued a report that recommends establishing a permanent AI commission and creating a framework for policy development “that will harness [AI's] power for the greater good of Vermonters.” Washington state and Alabama have created commissions to establish guidelines on the procurement and use of AI.

A bright future for AI in government

According to a report commissioned by the Administrative Conference of the United

States, 45% of federal agencies have dabbled in AI. The category of “regulatory research, analysis and monitoring” had the most use cases, followed by “enforcement” and “public services and engagement.” However, the report notes that agencies are at different stages of AI adoption, and only 33% of the use cases were fully deployed.

In the recent survey of FCW readers, the most common AI projects involved cybersecurity (50%), data science (38%) and data labeling (25%). Furthermore, 47% of respondents said their agencies were using AI-based tools for data analysis and 44% were using them to streamline workflows.

Many agencies first deploy AI to automate routine processes. When they were overwhelmed by record demand for information from the public during the pandemic, a number of agencies turned to robotic process automation. For example, state and local governments deployed chatbots to help with the deluge of unemployment insurance applications, and the Centers for Disease Control and Prevention launched the Coronavirus Self-Checker to help people decide when they should seek testing or medical care.

Beyond the pandemic, the Securities and Exchange Commission has developed the Corporate Issuer Risk Assessment to detect fraud in accounting and financial reporting. The machine learning tool can detect anomalies in financial reporting and identify potential misconduct.

Research firm Gartner sees a bright future for AI in government. In terms

of the technology changes necessary to boost the government's ability to adopt AI, Gartner predicts that more than 50% of agencies will have modernized critical core legacy applications to improve resilience and agility by 2025. Gartner also said 75% of governments will have at least three enterprisewide hyperautomation initiatives launched or underway by 2024. Hyperautomation refers to the orchestrated use of multiple technologies, tools or platforms to automate as many processes as possible.

AI isn't as new as it might seem. John McCarthy coined the term “artificial intelligence” in 1956 and defined it as “the science and engineering of making intelligent machines.” Although it has taken some time for the technology to evolve, industry leaders are now working closely with government agencies to achieve the promise of AI by making tools easier to scale, manage and use in real-world applications. Thanks to those ongoing technological advancements and the growing number of government initiatives, the AI revolution is picking up speed. ■