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DeepDives

Agentic AI Redefines FEDERAL INNOVATION

INSIDE:

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From the editor's desk

Sarah Sybert, Managing Editor

Agentic AI Ramping Up Across Government

The artificial intelligence revolution is putting more attention on agentic AI because of its ability to support decision-making without needing constant human oversight. This capability has a lot of promise for government, and federal leaders are taking notice.

Inside, you'll learn how agencies like the Defense Logistics Agency, U.S. Postal Service and the National Institutes of Health as well as industry partners like ServiceNow are deploying agentic AI to tackle mission-critical challenges around customer experience, health research and autonomous military operations.

DLA CIO Adarryl Roberts and NIH data leader Susan Gregurick explained the importance of trust, transparency and governance in adopting these intelligent agents.

Meanwhile, officials from CIA and the Defense Department outline how agentic AI is reshaping enterprise automation and national security. Careful oversight and robust security standards are cornerstones of agentic AI's boom.

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Beyond Automation: How Agentic AI is Reshaping Federal Missions

IT officials are exploring the full potential of AI agents to boost efficiency, empower human workers and transform federal operations.

BY ROSS GIANFORTUNE

Federal agencies are testing the limits of agentic AI to boost mission delivery and drive.

"We're not looking at the technology itself. We're really saying, let's define the problems our agencies are looking to solve, and through that lifecycle management of technology, where is [agentic AI] applicable? Where is automation applicable?" said Defense Logistics Agency CIO Adarryl Roberts in May.

In April, Office of Management and Budget Director Russell Vought issued a pair of memos that redefined the federal approach to AI, including agentic AI systems.

"Agencies should focus recruitment efforts on individuals that have demonstrated operational experience in designing, deploying and scaling AI systems in high-impact environments," Vought wrote. The directives emphasized the need to remove bureaucratic barriers and empower chief AI officers to act as "change agents," rather than gatekeepers.

USPS Eyes Agents for Logistics and CX

The U.S. Postal Service is beginning its agentic AI journey to personalize experiences for customers and automate software development, CIO Pritha Mehra told GovCIO Media & Research in July. Mehra added that agentic AI can help the service become more efficient within supply chains and other complex tasks.

"We're looking at automating our entire DevSecOps pipeline, but truly, to

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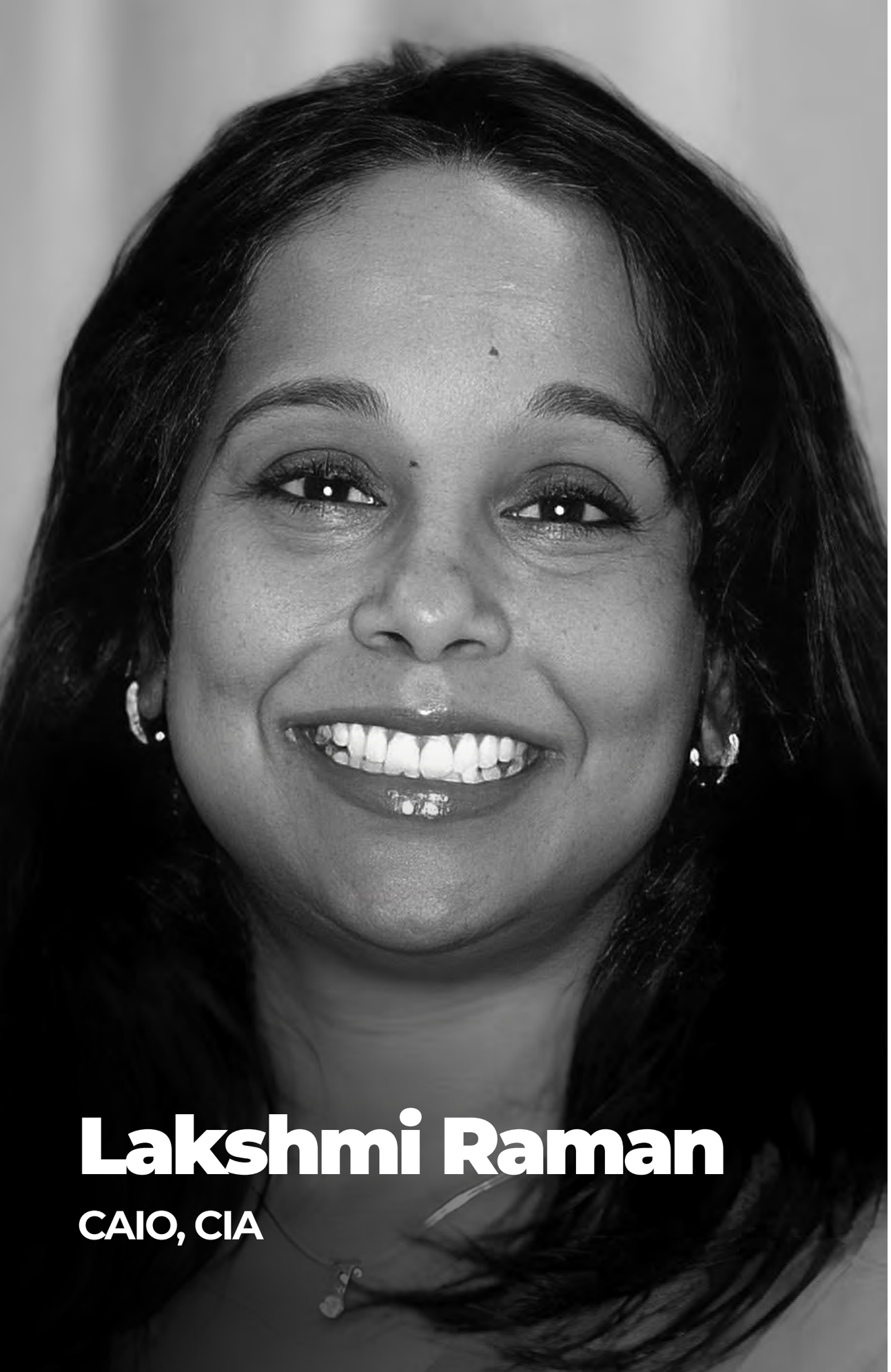

get to where we want to go, you want to bring in agentic AI that will automate your complex tasks and personalize [customer] experience, which will really help drive the efficiencies," Mehra said.

USPS is using agentic AI to better understand and leverage data produced by interactions within the service, Mehra said. Agencies like USPS can better serve the mission by deploying AI agents, she added.

"Those organizations that are able to first of all prepare their data, then harness that data with all these intelligent tools," Mehra said. "These are the ones that are going to win."

Personal Health Agents and Predictive Care at Health Agencies

The Advanced Research Projects Agency for Health (ARPA-H) has embraced agentic AI as a key focus of its AI strategy. The agency uses a variety of AI models acting as agents to monitor and check one another, according to former ARPA-H Director of Data Innovation and Acting CDO Alastair Thomson.

"How do we use AI to keep it tabs on AI?" Thomson told GovCIO Media & Research. "We work with Microsoft, OpenAI and Anthropic because they're all coming at these things slightly differently."

The agency is currently using this approach in its chatbot that functions as an "AI scientist" for program managers and staff. The chatbot, named Grace after Grace Hopper, can detect hallucinated citations, a problem that has even appeared in recent scientific publications, Thomson said. This is part of a broader effort to use AI to ensure the accuracy and reliability of information, especially in complex scientific fields where a human may find it difficult to keep up with the state of the art, he added.

"We're using a variety of AI models as agents to check on one another. We're doing this in Grace at the moment, where we've designed an agent to detect hallucinations of citations. There's been scientific publications recently

“I think AI agents are really exciting to help us in our business use cases.”

— Lakshmi Raman, CAIO, CIA

that shall remain nameless, that had hallucinations in them, which was a bit embarrassing,” said Thomson. “We can’t afford to do that.”

The Department of Veterans Affairs is looking to bring agentic AI systems to augment its health care workforce, Shane McNamee, former health solution architect at the agency, told GovCIO Media & Research.

“[With agentic AI, we want to] be able to use … single AI agents that are bespoke with their LLMs for specific problems,” McNamee said. “[We are also looking at] agentic orchestration where you have a central AI agent that has 30 or 50 different agents that it can call in a microservices way to answer specific questions.”

Enterprise Automation at CIA

CIA’s Chief AI Officer Lakshmi Raman described agentic AI as a powerful tool for enterprise automation, capable of executing complex, multi-step workflows and interacting across diverse databases and systems.

“I think AI agents are really exciting to help us in our business use cases,” Raman said at the AWS Public Sector Summit in June. “AI agents can help us with our help desk. AI agents can help us fill out forms automatically so that then we can go look and make sure it’s all been addressed and hit ‘submit.’”

Raman noted that CIA is pursuing responsible deployment of AI agents. She raised concerns about model “drift,” where AI performance may degrade over time due to shifting data and the “black box” nature of AI systems, which can obscure how decisions are made.

“A lot of things are more normal. What is happening when you are thinking about drift, you also have to think about a bigger black box [in AI systems],” Raman said. “What’s going on inside of that black box and can you have a level of explainability around that to your users?”

Raman underscored the importance of maintaining human oversight at critical decision points to ensure accuracy and accountability. Data analysis by CIA staff must always be done “with a human” to review.

“I think there’s a lot of opportunity there for us again to get the productivity gains that we’re looking for,” she said.

Raman said that the agency needs to maintain rigorous checks to ensure that AI data usage aligns with policy and legal frameworks. Despite these hurdles,

she said she is optimistic about agentic AI's role in enhancing mission support and operational efficiency, provided it is implemented with transparency, oversight and a clear understanding of the technology's limitations.

"Being able to trust AI has an incredibly important concept. Having the ability to explain that to them is very important for legal and data compliance," Raman added. "Being able to gather data from multiple slate spaces to be able to leverage AI agents for our cognitive agents, is incredibly exciting."

Agentic AI for National Security

The Defense Department is actively exploring agentic AI to enhance military capabilities, moving beyond traditional, pre-programmed systems toward more dynamic and resilient autonomous operations for complex tasks, officials said.

Jamie Fitzgibbon, AI program manager for the Defense Innovation Unit, said that DOD's agentic AI is evolving from "leader/follower" and "pre-programmed" models to a more intelligent, multi-agent approach. Fitzgibbon used the example of drone swarms to illustrate this change. Instead of a single drone directing others, or all drones being rigidly pre-programmed, agentic AI allows each drone to make individual decisions based on a shared objective.

"[AI agents] all making individual decisions. They're all programmed with the entire [Concept of Operations] of 'here's what we need to do.' If five of them get taken out, the other five can operate as if all 10 were there. They can fill in the gap," Fitzgibbon said.

This model is being considered for a wide range of applications, from autonomous submersibles to information operations. Fitzgibbon stressed that agentic AI systems are "hungry" for data and require extensive training, which necessitates new hardware and a forward-thinking policy framework. The goal, she added, is to create models that are not hyper-programmed for a narrow space but are instead capable of intelligent, higher-level decision-making and sensor fusion to provide critical insights to military decision-makers.

Photo composite credit:
Gorodenkoff/Shutterstock

For DOD's software development purposes, agentic AI is becoming more advanced, capable of not only creating code but also deploying it within the entire development environment, according to DOD Chief Software Officer Rob Vietmeyer.

"We're seeing agentic AI engines, moving not just to developing the software code, but being able to move, being able to deploy into the shell, to deploy right into the full development environment, and not only control the software input, but also starting to control the pipelines," Vietmeyer told GovCIO Media & Research. "This is fascinating and also really scary to where we're going on this journey"

Vietmeyer echoed the need for responsible agentic AI across DOD, saying security standards are critical to any national security implementation.

"How do we make sure that these AI agents are operating within a zero-trust framework, that we're creating hermetic builds, and these AI agents aren't compromising these controls in some way?"

Photo credit: Gorodenkoff/Shutterstock

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Agentic AI vs. Generative AI

Agentic AI goes beyond content creation by acting autonomously and making decisions to achieve specific goals.

Agentic AI

Proactive: initiates actions toward goals

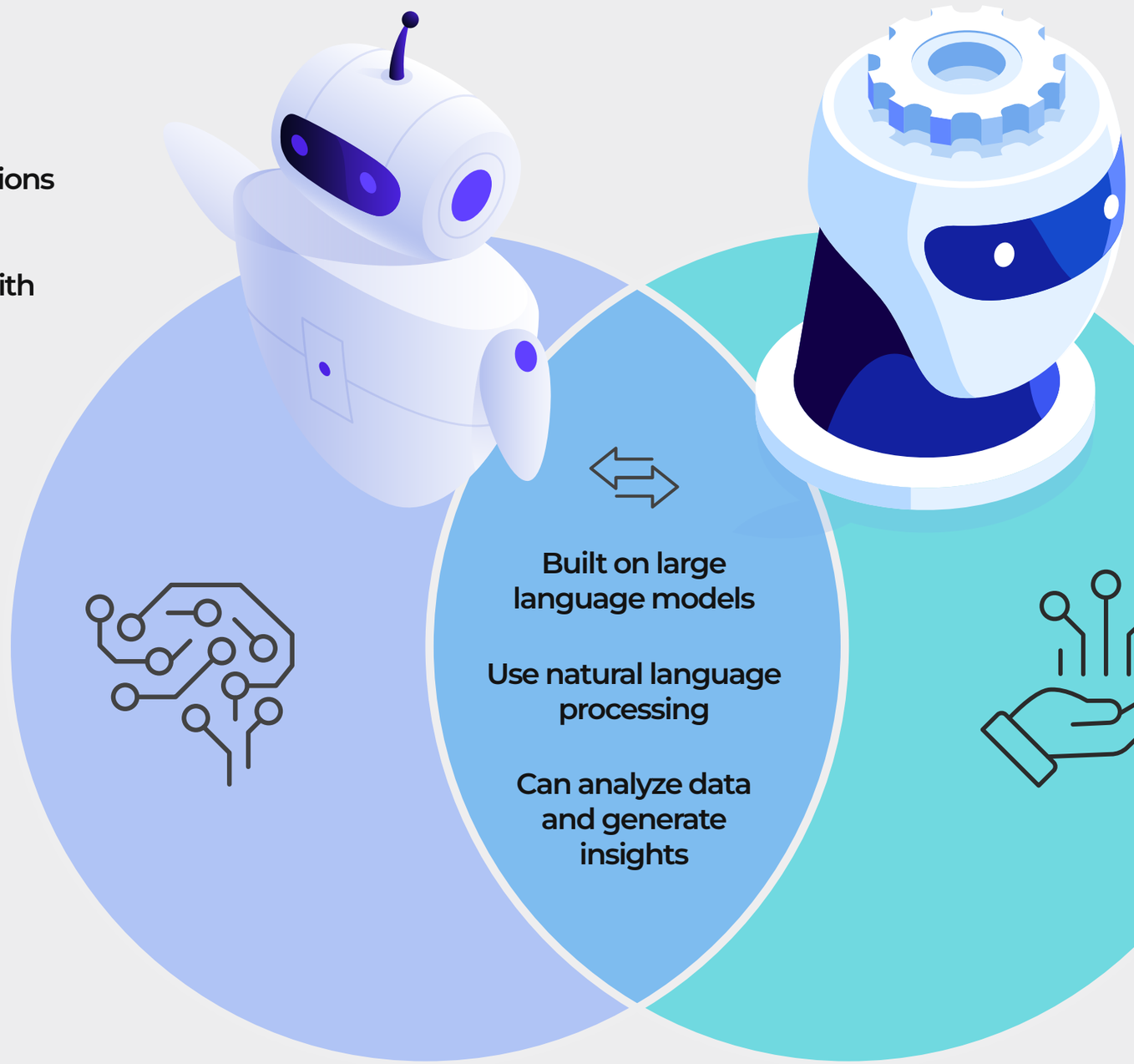
Acts autonomously with minimal human supervision

Decision-making and multi-step planning

Uses reinforcement learning

Handles complex tasks like workflow management

Real-time environmental interaction



Built on large language models

Use natural language processing

Can analyze data and generate insights

Generative AI

Reactive: responds to prompts

Creates content

Used in chatbots

Focused on one-off outputs

Adapts to user input during interaction, not the broader environment

Source: Thomson Reuters

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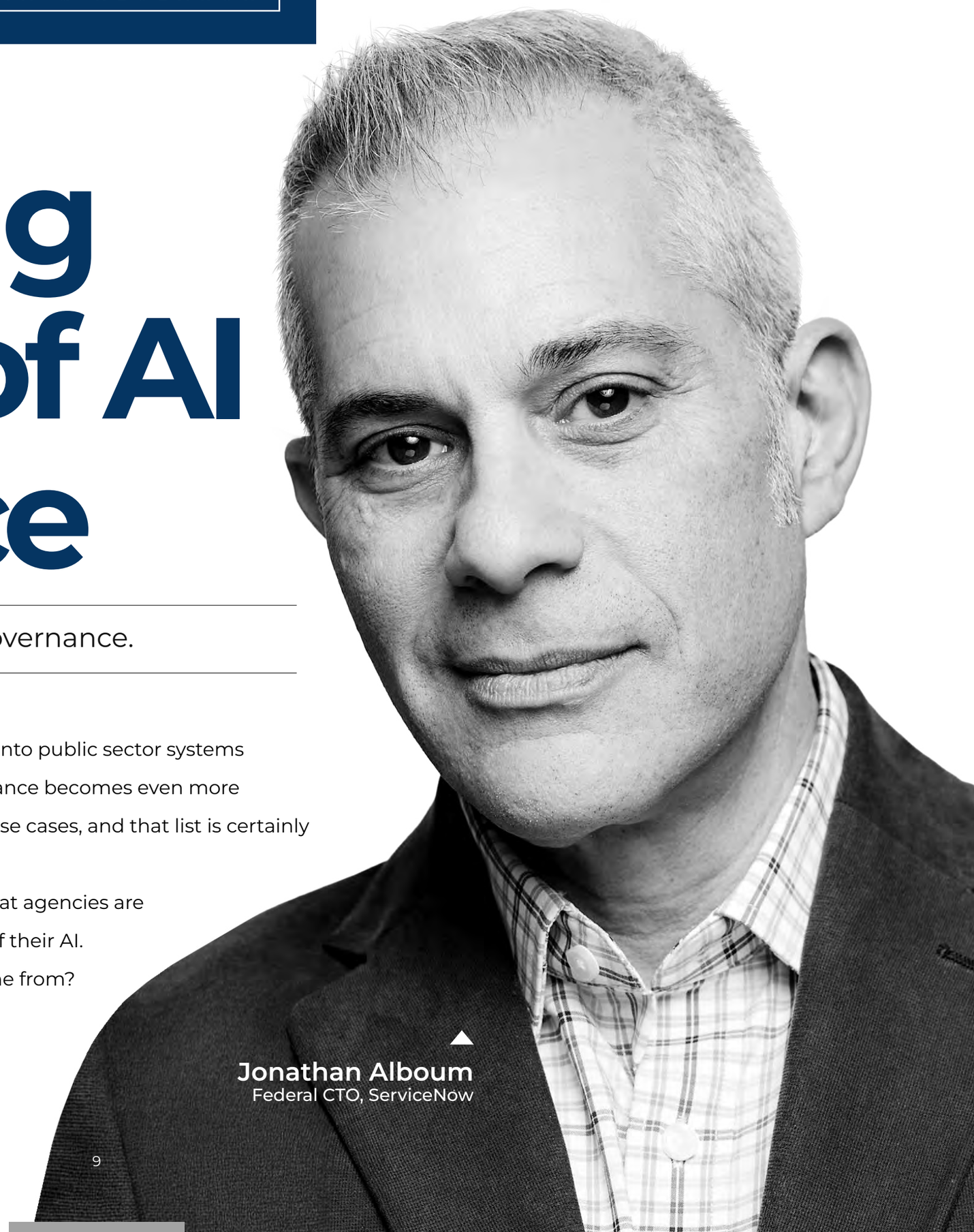
The Coming Evolution of AI Governance

New frameworks and new tools empower effective governance.



Jonathan Alboum
Federal CTO, ServiceNow

What are the biggest challenges with AI governance?

Alboum As AI capabilities become more sophisticated and integrated into public sector systems that citizens and government employees use, the whole concept of governance becomes even more important. In January, federal agencies reported around 2,400 different AI use cases, and that list is certainly higher now.

With a significant investment in AI, governance is essential to ensure that agencies are capturing value from these investments. Agencies must have a repository of their AI. What are your AI systems? What are the models? Where does the data come from? How do these systems align with the agency's strategy?

AI needs to be thoughtfully integrated with governance around data, cybersecurity and risk management. (ctd.)

“Because we’re an AI society now, we need to be an AI-enabled government.”

— Jonathan Alboum, Federal CTO, ServiceNow

What tools and frameworks are available to support agencies in this area?

Alboum ServiceNow has many of the same business and technology problems as many federal agencies. So, to improve our own processes, governance and to manage risk, we looked at the NIST AI Risk Management Framework (RMF) when we developed our AI Control Tower, which is based on AI-capable AI management capabilities. The NIST AI RMF gave us a way to standardize and structure our approach to risk identification and risk management.

Tools like the AI Control Tower enable organizations to assess the value of all their AI investments across all the technology providers and to ensure that they are working together properly. These tools take the intelligence created by all these AI models and make them actionable.

When we are looking at AI governance, there is a relationship that must be formed between the AI capabilities, the digital agent worker, the human worker and the person overseeing it all, whether it’s ServiceNow as the agent of all the agents or it is a human manager. Technology cannot outpace humanity. We still have millions of federal workers and they’re doing important work.

How do you see agencies evolving their AI governance over the next year?

Alboum Agencies realize that AI governance needs to be created if it does not already exist. It cannot live in isolation. It needs to be integrated into their business management processes. It needs to be integrated into their risk management processes. It needs to be integrated into cybersecurity and data governance processes. It needs to be integrated into their contracting processes.

It will have to be integrated into their HR processes, since we will be managing hybrid teams of human and digital workers. Because we’re an AI society now, we need to be an AI-enabled government. To do that successfully, you will need an integrated, AI-enabled governance tool like the ServiceNow Platform and the AI Control Tower to understand the landscape of all these capabilities that are working together and how well they integrate.

You need that single pane of glass to see how all your IT investments align to your strategy, as well as how well they are executing and operating.

Having that unified view of your entire AI enterprise will also allow them to avoid the type of sprawl — like we saw with data centers, cloud, laptops mobile devices, and other technologies — that often expands without alignment to the agency’s strategy and mission delivery.

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NIH Advances AI Through Agentic Tools

NIH is exploring new agentic AI tools to improve research as the agency builds out its first AI strategic plan.

BY SILVIA OAKLAND

The National Institutes of Health (NIH) is developing its first AI Strategic Plan, which will shape future strategies of biomedical AI capabilities at the agency, as leaders explore how agentic AI can improve health research.

Susan Gregurick, NIH's associate director for Data Science and director of the Office of Data Science Strategy, told GovCIO Media & Research that NIH has significantly invested in AI to support both research and development and administrative efforts over the past decade. The new plan will focus on high impact AI cases, utilizing AI for agency operations, best practices for AI validation in health care delivery and collaboration with the Food and Drug Administration to evaluate clinical AI tools.

"This strategic plan will foster synergy across programs, enhance transparency and expedite the research and development and translation of AI discoveries to benefit patients," said Gregurick.

She added that as NIH considers the growing number of AI applications, the agency is cognizant of ensuring patient privacy.

"As these tools become more sophisticated, they may increasingly run the risk of exposing the underlying data on which they were trained, potentially posing privacy risks to research participants," Gregurick said.

Leveraging Agentic AI to Improve Research

NIH developed an AI agent called GeneAgent within the National Library of Medicine (NLM) that creates more accurate and informative descriptions of biological processes and their functions in gene set analysis compared to preexisting systems. The agency is relying on frameworks to ensure effective use and reliable outputs as AI becomes more integrated into operations. (ctd.)

Photo credit: Invision Events/GovCIO Media & Research

NLM Senior Investigator Zhiyong Lu told GovCIO Media & Research that the tool performs functional analysis of novel gene sets from existing databases. He added that GeneAgent can serve as a “powerful tool for the discovery of therapeutic targets” because of its high accuracy rate.

“By comparing the original predictions with known knowledge retrieved from existing human-curated databases, GeneAgent automatically compiles a verification report that either supports or refutes each prediction,” Lu told GovCIO Media & Research.

After examining the verification results, GeneAgent will summarize a prediction for researchers and provide an explanatory analysis to add context and justification for the predicted function. Zhiyong highlighted a new framework NIH used in the development of GeneAgent to ensure output reliability.

“In this study, we leveraged an agentic AI framework that incorporates an automated self-verification mechanism to mitigate the hallucination issues commonly observed in general-purpose GenAI tools,” he said.

NIH is also a partner agency in the National AI Research Resource (NAIRR) pilot, which is developing a national infrastructure to connect U.S. researchers with resources for AI research. The pilot is cited in the White House’s AI Action Plan to increase AI research opportunities, a part of President Trump’s larger goal to make the U.S. the global leader in AI.

NIH’s Commitment to Securing Health Data

As AI becomes commonplace, Gregurick said researchers have developed several privacy-preserving techniques to mitigate data security risks.

“NIH is considering the degree of potential risks posed by data leakage from generative AI and may develop future AI policies and guidelines to address these risks,” said Gregurick. “Currently, NIH has provided guidance that researchers who are using genomic-controlled access data to train generative AI models may not share the model, including model parameters, except with collaborators.”

“We leveraged an agentic AI framework that incorporates an automated self-verification mechanism to mitigate the hallucination issues commonly observed in general-purpose GenAI tools.”

— Zhiyong Lu, Senior Investigator, National Library of Medicine