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Putting Principles into Practice: How the U.S. Defense Department is Approaching AI

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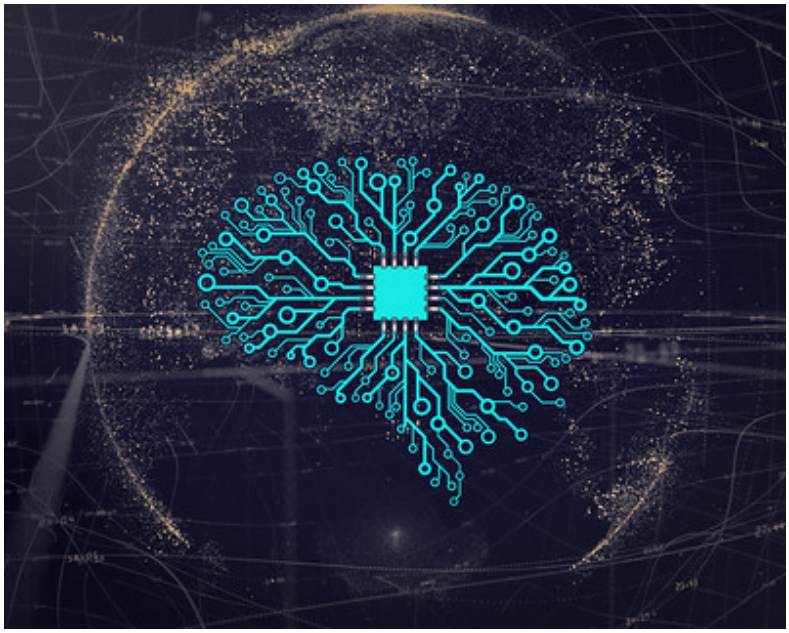
SYNOPSIS

The U.S. Department of Defense is working toward adopting and implementing the concept of Responsible Artificial Intelligence, or RAI. The Defense Department must maintain strong momentum to ensure its RAI principles are actionable and repeatable across the DoD's myriad offices, mission-sets, and priorities.

COMMENTARY

The U.S. Defense Department (DoD) is wrestling with how to institutionalize the concept of "Responsible AI" (RAI) – the belief that artificial intelligence (AI) systems should be developed and deployed safely, securely, ethically, and responsibly. The idea of RAI is built upon a years-long effort by the DoD to articulate and implement policies and principles around the appropriate and ethical use of AI capabilities.

RAI is the next step in this progression. In a May 2021 memo, Deputy Secretary of Defense Kathleen Hicks explained that it was critical for the DoD to create a "trusted ecosystem" in AI, that "not only enhances our military capabilities, but also builds confidence with end-users, warfighters, and the American public." The memo tasked the Joint Artificial Intelligence Center (JAIC) – a central body that seeks to synchronize AI activity across the DoD – with coordinating the development and implementation of RAI policies and guidance.



Artificial Intelligence (AI) is widely regarded as the next big technological development. *Photo by Mike Mackenzie on Flickr.*

While the application of RAI is still at a nascent stage, the DoD's continued messaging and prioritization of safe and ethical AI is important, and shows that the Pentagon's interest is not waning. The Defense Department, and the JAIC in particular, will have to keep momentum strong, working to ensure RAI principles and practices are ultimately digestible, actionable, and repeatable across the DoD's myriad components.

Defense Department's Progress on AI

The concept of RAI is the result of nearly four years of effort by the Defense Department to define its AI strategy and priorities. The DoD first laid the groundwork in June 2018 with the creation of the JAIC, and released its first AI strategy eight months later, which called for the adoption of "human-centered" AI. The strategy also promised U.S. leadership in the "responsible use and development of AI" by articulating a set of guiding principles.

Those guiding principles were conceived of and established by the Defense Innovation Board (DIB)—a federal advisory committee of technology experts—in October 2019, and were adopted by the Defense Department three months later. The five ethical principles—Responsible, Equitable, Traceable, Reliable, and Governable—were meant to serve as foundational guidance for the Defense Department's approach toward AI.

Deputy Secretary Hicks built off these principles in her May 2021 memo, directing the DoD to implement RAI with these six tenets:

1. *RAI Governance.* The DoD will create structure and processes for "oversight and accountability" and articulate policies and guidelines to "accelerate adoption of RAI within the DoD."

2. *Warfighter Trust.* The Defense Department will ensure warfighter trust through "education and training," as well as by establishing a framework for "test and evaluation and verification and validation."

3. *AI Product and Acquisition Lifecycle.* The DoD will develop processes, policies, and guidance to ensure the implementation of RAI throughout the "acquisition lifecycle" of an AI product.

4. *Requirements Validation.* The DoD will incorporate RAI into "all applicable AI requirements" to ensure its inclusion in the Defense Department's AI capabilities.

5. *Responsible AI Ecosystem.* The Defense Department will create an RAI ecosystem both nationally and globally to improve collaboration with academia, industry, and allies and partners, as well as "advance global norms grounded in shared values."

6. *AI Workforce.* The DoD will work to build an "RAI-ready workforce" to ensure "robust talent planning, recruitment, and capacity-building measures."

Components of the DoD, including the JAIC, the DIU, and the RAI Working Council, have been working to translate the directives and principles from the May 2021 memo into concrete guidance. In November 2021, for example, the Defense Innovation Unit (DIU) released RAI guidance for contractors looking to partner with the Defense Department. The document provides guidelines for each phase of the AI development lifecycle – planning, development, and deployment – and is intended to act as a "starting point for operationalizing" the Defense Department's AI ethical principles.

In addition to its work on RAI, DoD leadership has prioritized organizational changes to better streamline the Defense Department's AI work. In December 2021, the Defense Department announced that it was creating the position of a Chief Digital and AI Officer (CDAO) – a role meant to serve as the DoD's "senior official responsible for strengthening and integrating data, artificial intelligence, and digital solutions in the Department." Part of the CDAO's mission will be to align and sync activities across the JAIC, Chief Data Officer (CDO), and Defense Digital Service (DDS).

The Defense Department's AI priorities have also been shaped by actions taken within the broader U.S. government. For example, the National Security Commission on Artificial Intelligence (NSCAI) – a commission created by Congress to evaluate America's AI competitiveness – released a report a year ago with dozens of recommendations aimed at shaping U.S. strategy on AI, including tackling themes such as talent, investments in research and development (R&D), and institutional processes. Many of these themes were mirrored in the 2022 National Defense Authorization Act (NDAA), which authorized more investments in AI, new pathways for "digital career fields, "and a pilot program aimed at the "agile acquisition of technologies for warfighters." These moves within the U.S. government and Congress show that lawmakers and government officials are eager for AI to remain a technology and defense priority.

Looking Ahead

As the Defense Department continues to move ahead with implementing the concept of RAI, it will face a number of hurdles. The DoD will have to keep momentum and interest in AI alive and strong, particularly as priorities and technology interests within the Pentagon inevitably evolve and shift. The Defense Department is an enormous bureaucracy with innumerable competing interests. The JAIC, the DIB, and now the CDAO, will need long-term and persistent buy-in from across the Defense Department, including senior DoD leadership and the military services, to support its AI policies and guidance around RAI.

Institutional and bureaucratic barriers from within the Pentagon will continue to present new and existing headwinds for adopting and widely deploying AI capabilities. As a February 2022 GAO report describes, some of these challenges are more typical for the DoD, like talent shortages and lengthy acquisition processes, while others, such as sufficient usable data, are more unique to AI.

These challenges are long-standing and will almost surely persist as time goes on. The Defense Department, however, is actively working to ensure it has the right policies, investments, infrastructure, and processes in place to successfully adopt responsible AI. The DoD must remain a leader in these efforts – working with the broader U.S. government, as well as with allies and partners, to ensure safe and ethical AI remains a priority.

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