

Trusting AI:

Integrating Artificial Intelligence into the Army's Professional Expert Knowledge

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Introduction

Integrating artificially intelligent and data-driven technologies for military purposes poses a special challenge that risks undermining trust in the system and in the military profession. First, data, algorithms, and the systems they support interact in complex ways that change even familiar processes into something unfamiliar. Second, much of the expertise to employ these systems lie outside the military. These conditions, taken together, raise concerns regarding the basis on which commanders can be accountable for these systems' output. Without accountability, there is little basis for trust.

Trusting AI and data-enabled systems requires, first, understanding the context in which AI is applied; second, understanding what one is trusting AI to do; and finally, understanding how to interact with the AI-driven system, including how the system receives input and provides output. Meeting these conditions enables one to audit and ensure the authenticity of the data, which is critical for trust. From the point of view of the profession, trusting AI- and data-enabled systems also requires one to understand the broader context in which one applies these technologies, including how one trains and educates soldiers to employ them, what ethical norms should govern their use, and what impacts they have on the profession's stakeholders.

Technical

Achieving optimal performance requires commanders to ensure staffs and operators understand the competence of the model, the quality of data shaping the model's understanding, and the model's demonstrated performance in the operational environment. Trusting the system requires commanders to be accountable for the system's output, and this accountability requires commanders to determine when and where to impose human control without sacrificing

machine capabilities. This study offers engineering and policy solutions to address these requirements.

Human Development

Effectively employing AI can require highly specialized knowledge; however, almost every soldier will have to acquire some familiarity with how these technologies work. Moreover, the distribution of expertise between the government and the private sector suggests that vendor management will also be a critical skill. Optimizing Army talent management to develop and sustain AI capabilities will also require revising how the Army identifies educational requirements, aligns talent with operational needs, and tracks talent, so it is available where it is most needed.

Ethical

From an ethical perspective, targeting requires preventing—or at least mitigating—potential harm to noncombatants and friendly forces. This study discusses ways AI technologies can improve ethical outcomes, even in large-scale combat operations.

Political

Political-cultural knowledge requires knowing how the use of emerging technology will affect expectations about the use of force, how these expectations affect social perceptions of military service, and how other Department of Defense efforts to employ the technology affect one's efforts.

Conclusion

Commanders of the (near) future will need to understand how AI-enabled systems will interact with commanders' judgments about risks to friendly forces and noncombatants, as well as how to ensure staffs and operators can curate and train algorithms. Finally, commanders and staffs must have expertise in interacting with the private sector, which the Department of Defense will rely increasingly on for both AI and data technology and its operation.

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