

Leveraging Artificial Intelligence: The Potential Use and Applicability for Safer Defence Operations

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Abstract

Artificial intelligence (AI) systems prove their usefulness, new models of methodologies, and advancements in accuracy and fluency every day across all the different operations worldwide. Today, AI applications have become more urbane and involve the different types of human intelligence of culture, demographics, and the development of computing systems, as well as the ability to perform various tasks to manage visual perception, speech recognition, and translation between languages. As these developments occur, tremendous leaps forward in capability and availability will be made, representing an opportunity for additional military applications of AI. However, how AI can help different countries manage security in line with the ongoing pace of AI in the defense sector is still not clear. Thus, this paper is a novel effort at the potential use of AI, the landscape of technological research on AI, and development captured from India's Atmanirbhar Bharat program and tries to fill the gap. A detailed review is carried out on AI in defense, and its emergence from history to current times is brought to the fore; the review focuses on deterrence demands, sufficient technologies to be internalized, and the ability to apply them for safer control over discrete and remote defense operations. Based on the mixed methods approach, the paper presents a qualitative synthesis of the modernization of defense, using AI, and technological and operable challenges that may be thrown up for broad applications of AI systems. This qualitative and conceptual study shows the implications of how India could take a new path or approach to leverage AI and optimize its security apparatus in ways that can enhance the economy's growth.

Keywords

Artificial intelligence, Defense sector, Security, India