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Artificial Intelligence in the Military Field: A Relevant and Useful Tool

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Summary

This article discusses the benefits and considerations of using Artificial Intelligence (AI) in the decision-making process in the military arena. It focuses on three main aspects: the ability to provide faster and more accurate information, situational mastery and the reduction of human error, as well as the technical and ethical considerations that must be taken into account when using this technology. The author argues that AI can significantly improve decision-making in the military realm; however, it is important to reflect on the ethical and technical implications associated with its use.

Keywords: Artificial Intelligence, Situational Domain, Human Error Reduction, Synthetic Environments, Disruptive Technologies, Informed Decisions.

Introduction

Artificial Intelligence (AI) has become an essential tool in various fields, including the military. This is defined as the development of computer systems capable of performing tasks that would normally require rational intelligence, typical of the human being, which involves recognizing speech, making decisions and solving problems. In the military field, AI can help commanders decide, in a faster and more accurate way, by processing valuable information in real time. However, its use, in the military field, presents ethical and technical challenges, such as the impact of its implementation on human beings, in aspects such as privacy and data security. It is essential to understand what the benefits and challenges of AI are, in the military context, to execute it effectively and responsibly. In this sense, the application of AI can optimize the ability of commanders to

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provide informed and timely decisions on the battlefield. In addition, the immediate treatment of a large amount of information makes it possible to have a more complete view of the panorama, which serves as a basis for anticipating sudden changes and possible risks that require gaining situational mastery. It also contributes to reducing personal mistakes, being free from the limitations of each individual.\(^3\) However, it is necessary to consider the ethics involved in the management that can be given to this disruptive technology.

**Fast and Accurate Information of Artificial Intelligence in Decision Making**

The use of AI, in the military field, is not a new concept. However, in a short period of time, it has become an increasingly relevant and useful tool.\(^4\) Its ability to process large amounts of data at high speed and accurately, as well as to analyze patterns and trends, provides significant information that can help commanders execute measures in the event of a crisis, which requires a rapid and effective response, which is very useful in contexts where the fulfillment of the mission may be compromised.

In addition, AI enables better data analysis by identifying patterns and trends that humans might miss. This provides a more complete and clear view of any scenario, enabling the military to make more informed decisions. It can also automate tedious and repetitive tasks, such as data collection and analysis, freeing up time for the implementation of more relevant actions.

In this sense, the speed and quality of the information provided by AI have a positive impact on the military decision-making process.\(^5\) Commanders

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\(^4\) Ibid.

can have a tool that makes it easier for them to select and permanently maintain cognitive superiority during the development of operations. The term “cognitive superiority” refers to the ability to use information and knowledge in the most effective resolution on the battlefield. This means that AI can be used during the planning process, conducting operations and even, after mission completion, to provide feedback and consolidate cognitive superiority.

Likewise, in the planning of military operations, AI can analyze data, produce intelligence, and provide information on changes in the situation that require priority, as well as the availability of resources and other essential factors. During the conduct of war, AI can provide real-time data on device changes, communications traffic, and other critical factors. This advantage would empower commanders to implement quick and effective decisions in changing situations and ensure that their deployed assets are always in an advantageous position. For example, the Army of the People’s Republic of China (PLA) developed a system of autonomous vehicles to collect battlefield information, the purpose of which is to process it, in order to provide accurate elements for decision-making; it can even help with regard to the evaluation of results.

**Situational Mastery and Human Error Reduction**

According to the Institute of Modern Warfare of the Military Academy at West Point, the multitasking nature of AI allows it to be used in the collection and processing of information, through its real-time connection with means of reconnaissance, surveillance and intelligence integrated at different levels.

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of decision.\textsuperscript{8} AI’s ability to process large amounts of data and learn from it means commanders can increase their situational mastery and reduce human error in critical situations.

On the one hand, AI can process information in real time and give a complete picture of the situation on the battlefield. In addition, AI can analyze historical data and trends, allowing you to anticipate situations and make more accurate decisions in less time. Likewise, if it is articulated with autonomous means capable of conducting actions with their own criteria, the need to pause operations can be omitted, which makes it possible to maintain constant pressure on the adversary.\textsuperscript{9} For example, AI can analyze patterns of enemy behavior and predict future movements, which can be used to develop contingency plans with a smaller margin of uncertainty and more precise details.

On the other hand, the application of AI in the military decision-making process can also reduce human error. In this sense, the decision-making capacity of commanders is exposed to situations that require great attention, due to the consequences implied by the application of military power. For example, legal considerations, such as respect for human rights or the protection of their own forces, proved to be morally charged factors that ultimately have a stressful effect on commanders and can lead to wrong decisions resulting from fatigue, fear or lack of experience. In these cases, AI helps minimize these errors by providing accurate and reliable information.

Additionally, AI can be used to simulate situations in synthetic environments, allowing them to practice, gain experience and improve the skills of military personnel.

\textsuperscript{8} Paul Maxwell, “Artificial Intelligence is the Future of Warfare (Just Not in the Way You Think)”, \textit{Modern War Institute at West Point} (2020), \url{https://mwi.usma.edu/artificial-intelligence-future-warfare-just-not-way-think/}

personnel in a safe and controlled environment. As a result, the U.S. Army is using the advantages of AI in training infantry unit commanders to create variable scenarios – based on changes in the tactical situation – facing a simulated adversary, whose feedback and quick decision capacity enriches the training experience. This allows to strengthen the decision-making and situational mastery capabilities of infantry commanders trained by the US Army. In short, the application of AI in the military decision-making process allows responsible commanders to increase their situational mastery and reduce human error.

Technical and Ethical Considerations

AI is a technology that is increasingly being implemented in the military field with the aim of improving the effectiveness and efficiency of military operations. However, its use raises important technical and ethical considerations that must be carefully addressed. In this sense, the Peruvian Army (EP) should not be oblivious to this reality and the considerations involved in the use of these technologies, due to their disruptive nature.

From a technical point of view, the use of AI, in the military decision-making process, has the potential to provide faster and more accurate information, increase situational awareness and reduce the risk of human error. However, its use also poses significant challenges that must be properly addressed. The first refers to the quality of the data used by AI, which depends on

10 Samuel Cranny-Evans, “Creating training scenarios that accurately reflect modern warfare is a challenge, but synthetic environments can help to increase realism in military training”, Synthetic environments: the key to realism in military training, Army Technology (2022), https://www.army-technology.com/features/synthetic-environments-realism-military-training/


accurate, high-quality information to function properly. If it does not have these characteristics, the AI can make incorrect or inappropriate decisions, in addition to presenting errors in its training. Therefore, it is important that the PE has accurate and up-to-date data to ensure the efficiency of the AI. Secondly, it is imperative to have an adequate infrastructure for their use. In other words, AI requires a high-powered computing infrastructure and a reliable communications network to function well. Investment in infrastructure is therefore essential to fully exploit the potential of AI in the military decision-making process.

On the other hand, from the ethical point of view, the use of AI raises important reflections, such as the impact it would have on the lives of combatants, non-combatants and civilians affected by armed conflicts. It is therefore important that clear and transparent policies are established to regulate their use in military situations. In this regard, to ensure the effectiveness of the use of AI in the military field, it is necessary to specify the following aspects: First, the EP must establish clear and transparent policies on the use of AI and corroborate that all specialists, AI operators, are trained in the use, supervision and control of this technology. Second, the PE must ensure the availability of the computing and communications infrastructure necessary for the effective use of AI. This includes the acquisition of appropriate equipment and technologies, as well as the establishment of a secure and reliable communications network. For this reason, to fully harness the potential of AI in military decision-making, it is essential to invest in infrastructure.

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14 Zoe Stanley-Lockman, “Responsible and Ethical Military AI,” 51


16 Peter Svenmarck, “Possibilities and Challenges for Artificial Intelligence in Military Applications”, ResearchGate (2018), 4, https://www.researchgate.net/publication/32674066_Possibilities_and_Challenges_for_Artificial_Intelligence_in_Military_Applications/link/5b62d8140f7e9bc7917979c/download
Conclusions

AI can provide greater speed and accuracy in gathering information, as well as a greater ability to make informed and timely decisions, which can improve the effectiveness and efficiency of military operations. In addition, the use of AI can help reduce casualties and minimize collateral damage, which can protect civilians and limit the negative impact of military operations on the non-combatant population. To fully exploit the potential of AI in the military, it is essential that clear and transparent policies are established on its use, the training of military personnel in the use of AI is prioritized, and collaboration and exchange agreements are established with academic and research institutions. This will help minimize the risks and maximize the benefits of using AI in military operations. The experience of using AI in the decision-making process in the military field has as main actors the Armies of the USA and China, who have been developing this technology in an accelerated way due to the continuous competition to strengthen their presence in the world. From them, we can draw important lessons for the development of an AI of our own and articulate our needs in terms of defense; particularly, in our military decision-making processes. In conclusion, the Peruvian Army can benefit greatly from the proper implementation of AI in decision-making processes. This can be achieved through autonomous systems that provide faster and more accurate information; also, through the use of synthetic environments for the training of commanders in decision-making in simulators; and, finally, in the reduction of human error at the time of processing.

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