Report:

AI and Modern Warfare

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Abstract

Artificial Intelligence (AI) is increasingly shaping modern warfare by changing how military operations are planned, executed, and controlled. AI systems offer major advantages such as faster decision-making, improved surveillance, and reduced risk to soldiers. However, the use of AI in warfare also raises serious ethical concerns, including accountability for autonomous weapons, risks to civilian lives, and threats to privacy and human rights. This study reviews key ethical challenges related to AI in modern warfare by analyzing existing academic literature and policy frameworks. It focuses on issues such as autonomous weapons, military surveillance, conflict escalation, and the need for meaningful human control. The findings highlight the importance of ethical AI principles such as fairness, transparency, human oversight, sustainability, and accountability to ensure responsible and lawful military use of AI technologies.

Introduction

Artificial Intelligence (AI) is one of the emerging technologies that have significantly impacted the military world. There have been significant changes in how nations conceptualized war and the defense of the nation. Currently, AI is employed in strategic military planning for war, unmanned drones for weapons, and cyber warfare. This technology has the advantage of decisionmaking speed and awareness on the battlefield. This gives the military significant operational advantages (Russell & Norvig, 2010; Scharre, 2016). However, these advantages have been accompanied by significant ethical and moral challenges. For instance, the use of unmanned weapons poses the problem of accountability when these weapons are employed for the purposes of taking human life (Arkin, 2005; Pandey, 2025). Similarly, the use of AI for military intelligence poses the problem of violating civil liberties and human rights (Belfer Center, 2019; Paper 1).

In dealing with the above challenges, there seem to be various guidelines being provided to mitigate the above challenges using ethical approaches. There seem to be international humanitarian law, Geneva laws, and United Nations guidelines for the use of autonomous weapons, providing basic guidelines on the use of force in war (Arkin, 2005; Russell & Norvig, 2010). In addition, there seem to be organizations like OECD providing guidelines on ethical AI development, which entail fairness, transparency, human control, and accountability (Belfer Center, 2019; Horowitz et al., 2018). Ethical AI systems seem to entail systems that are transparent, which reduce bias, comply with human rights laws, and retain human control where decisions are made in a manner guided by law and society (Pandey, 2025; Horowitz et al., 2018).

However, when it comes to actual military use, responsible uses of AI will involve incorporating these into the development and use of AI systems. This entails carefully ensuring that there are no unintended negative consequences, use of explainable AI, ensuring data integrity, and ensuring that human judgment is engaged where necessary (Scharre, 2016; Belfer Center, 2019). This use of advanced technology with firm ethics will ensure enhanced military capability that also entails accountability, integrity, and ethics (Horowitz et al., 2018; Pandey, 2025).

Thematic Review - Key Ethical Challenges and Emerging Debates in AI

Artificial Intelligence (AI) has completely transformed the way wars are fought in the contemporary world due to its strategic advantages. However, this technology poses significant challenges from the point of ethics. One of the issues that have received the highest prominence in the discourses on the uses of AI is the use of Autonomous Weapons Systems (AWS). These weapons have the capability of operating without the need for human control. They have the ability to collect data, detect the target, and attack it without the need for human supervision (Scharre, 2016; Russell & Norvig, 2010). This helps these weapons react to situations quickly without the need for humans. However, this poses a significant issue regarding the control of the situation. In the case of civilians being attacked or if a conflict unravels beyond expectations, the responsibility will not lie with the programmer or the individual operating the system. This makes the use of the “Meaningful Human Control” concept the only viable solution for this problem (Arkin, 2005).

AI is also used for monitoring or intelligence operations. With technologies such as satellites or drone monitoring and real-time data analysis capabilities, AI increases situational awareness or informs faster about potential threats to national security (Lewis, 2024). As important as it is for AI to make national security processes more efficient, it is equally important to consider that AI monitoring systems have the potential to inadvertently or mistakenly affect civilian privacy or data interpretation. In recent years, therefore, there has been a significant need to effectively regulate national security against civil liberties or human rights obligations that AI has brought into focus (Scharre, 2016; Future of Life Institute, 2015).

The other critical risk could be the escalation of conflicts. Autonomous AI can misinterpret some signals and data, thus overreacting or overresponding (Russell & Norvig, 2010). From recent developments, the use of intelligence by AI can expedite military operations but can be accompanied by increased errors if human review is inadequate (SSRN, 2024) in conflict situations such as the one in Ukraine. There is a significant need to adhere to the highest ethics and applicable international humanitarian law and the Geneva Conventions and UN regulations on weapons (UN, 1983).

Ethical AI frameworks reduce these risks by, among other essential precepts, ensuring fairness so that decisions are not prejudiced; transparency, so that AI actions can be understood; human oversight, so that intervention is possible when required; accountability, so that responsibility is clearly laid out; and sustainability, so that AI is developed and used responsibly. Indeed, national and international efforts to include the U.S. Department of Defense AI strategy and UNESCO guidelines on AI support such guiding precepts and foster the responsible use of military AI.

In practice, responsible AI use in warfare requires policymakers, military leaders, and AI developers to work together closely. Strong ethical guidance enables AI to enhance military effectiveness and accuracy within the bounds of humanitarian considerations. In contrast, ignoring these ethical considerations would put civilians at risk and break trust-a situation likely to have long-lasting adverse impacts on both global security and international norms.

Generic ethical AI framework

There are many international as well as national efforts that have been made to assure appropriate usage of AI in a military setting. UNESCO Guidelines on AI Ethics (2021) define appropriate human-centric usage of AI, while OECD AI Principles (2019), among others, define human-centric, strong, stable, and secure usage of AI that includes social good as well as its application in a military setting. EU AI Act (2021), along with NIST's AI Risk Management Framework (2023), define risk-based governance or regulatory needs that are applied to high-risk uses such as autonomous weaponized systems. Military usage of AI is covered by DoD's AI Adoption Strategy (2023), which states that military usage of AI should be safe, secure, transparent, as well as human-in-the-loop. From these sources, a generic set of use of AI for current warfare involves five aspects of ethics of AI. Fairness – use of AI without bias or injustice. Transparency – transparent processes of AI. Human Oversight – human control over critical processes. Sustainability – responsibility of AI to society and the environment. Accountability – responsibility of AI to its activities. Each one of these five involves a good handbook on military AI activity and use of AI.

Generic Framework of Ethical Use of AI in the Context of Modern Warfare

To make military AI systems ethical, safe, and responsible, the following principles can be used as a guideline:
Fairness – AI systems should be unbiased in decision-making. All actions taken should be impartial and inclusive. Targeting systems should not discriminate or inadvertently harm civilians.

Transparency - AI processes must be interpretable, meaning that it must be understandable by commanders and those who operate these systems so that they know why these processes made certain decisions. This includes, therefore, transparent targeting or threat assessments.

Human Oversight- Key decisions, particularly those relating to life or lethal force, should be under meaningful human control. Humans should monitor and approve, or if need be over-rule, AI-related actions.

Sustainability: Designing and using AI applications will consider environmental and social responsibility, meaning military AI shall minimize resource consumption while always considering that the technology applied will support long-term security with no unnecessary harm being inflicted.

Accountability: responsibility for AI outcomes should be clearly designated. Developers, operators, and commanders should be held accountable for errors, misuse or unintended consequences, ensuring ethical and legal obligations are satisfie

Discussion / Personal Reflection

Reflecting on my own research work, I see that ethical AI is not just a technical need but also a social one. In particular, in future warfare, AI can increase military power many times, but without ethics, there are many possible risks of accidental harm, bias, and shared responsibility. Different guidelines, such as the UNESCO rules on AI ethics, the EU AI Act, or the NIST Risk Management Framework, have shown how different international and local efforts are working to create a fair, clear, and responsible way of developing AI.

One important thing I learned is about human judgment in the decisions made by AI. It is always better to have human control for lethal decisions when using autonomous systems. I also understood that fairness, transparency, and accountability are not just ideas but have a real impact on the world.

Following ethics in the use and development of AI can make the process safer and more available to everyone and make sure that human rights are not harmed. Ethical use can lead to more trust, less conflict, and overall global stability in the future. On the other hand, unethical use can lead to misuse of AI, which can hurt civilians, their safety, and trust. This study confirmed that ethics are important for developing safe AI.

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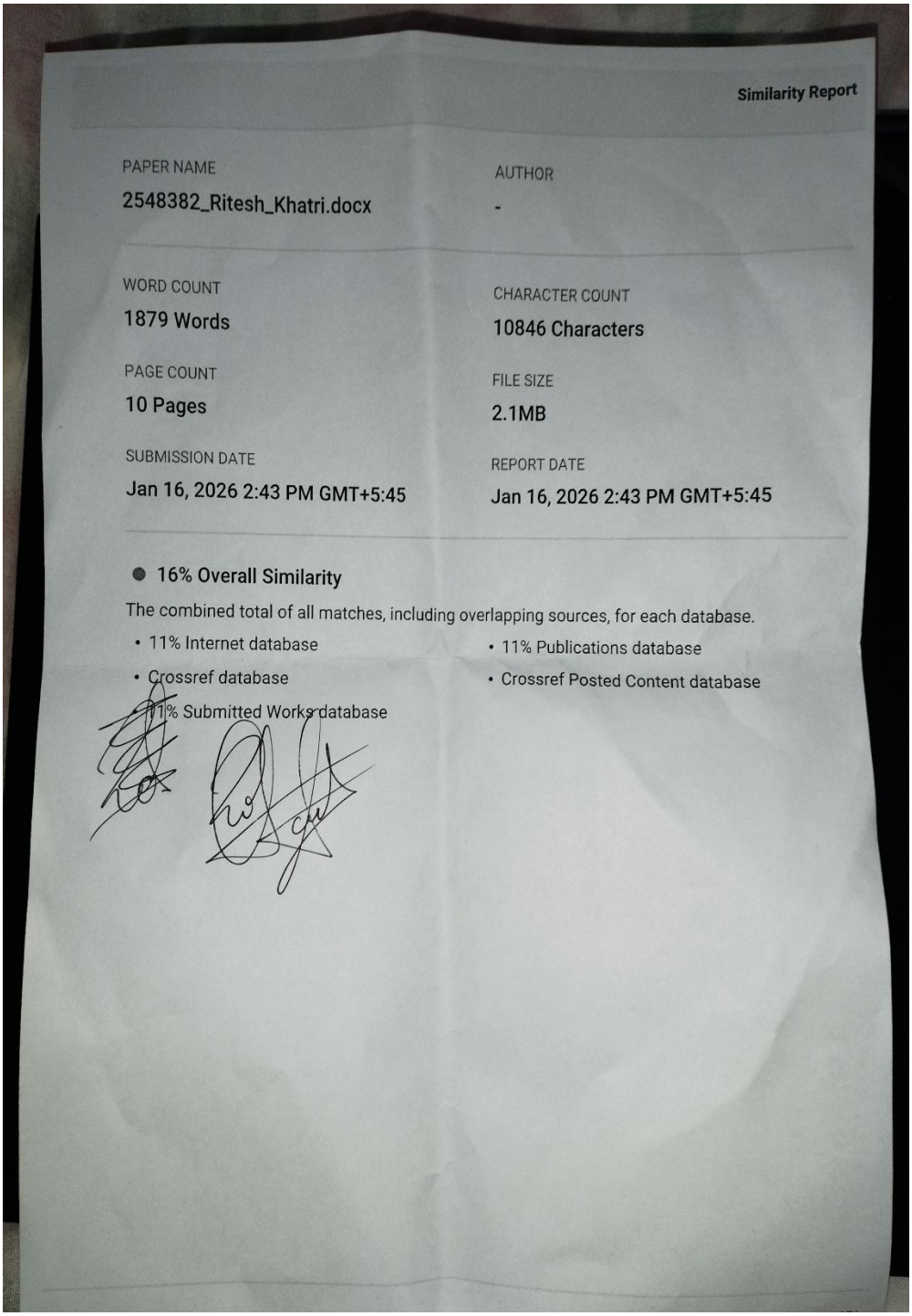
Appendix



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