



Recognising Human Rights Concerns in Military AI: Stabilizing the Authority and Legal Ethics

Dr. Gargi Bhatt¹

ABSTRACT

The integration of Artificial Intelligence (AI) into military operations has introduced transformative capabilities, offering enhanced efficiency and precision in defense strategies. However, it also raises critical human rights concerns that demand careful ethical consideration. This paper explores the balance between the power of military AI technologies and the ethical implications for human rights. Key issues include accountability for AI-driven actions, the potential for discrimination and bias in decision-making, privacy violations through mass surveillance, and the risk of losing human control in autonomous warfare systems. A framework for addressing these concerns is proposed, emphasizing transparency, human oversight, fairness, and compliance with international humanitarian law. By ensuring accountable growth and deployment of AI in military contexts, the balance of power and ethics can be maintained, safeguarding both security and fundamental human rights. The paper advocates for global cooperation and rigorous ethical governance to mitigate the risks associated with military AI while promoting its positive potential.

Keywords: *Artificial Intelligence, Military Operations, Human Rights, Ethical Governance, International Humanitarian Law.*

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INTRODUCTION

The incorporation of Artificial Intelligence (AI) into military maneuvers has sparked significant debate regarding its potential to transform warfare, offering both profound advantages and disturbing ethical dilemmas. As nations increasingly invest in AI-driven military technologies, from autonomous drones to decision-support systems, the need to balance the pursuit of power and security with respect for human rights becomes imperative. This article explores a framework for addressing human rights concerns in military AI,

¹Assistant Professor, Delhi Metropolitan Education College, Noida (Affiliated to Guru Gobind Singh Indraprasth University, New Delhi), E-mail: bhattgargi90@gmail.com

emphasizing the ethical challenges and proposing guidelines for responsible development and deployment. The future deployment of robots in the battlefield for roles such as perimeter and infrastructure guarding, combat support, firearms, missiles, and counter-explosive ordnance mining, alongside unarmed capabilities such as highly advanced deployment of psychological operation measures, and supporting operations in areas of extreme environmental contamination, is becoming a reality². These robots are autonomous. They use artificial intelligence (AI) and act free from human guidance. That is, they 'think' independently to operate toward mission objectives. Human rights law and ethical norms for military use provide an interconnected framework for addressing risks posed to civilians by the deployment of these machines³. The existing balance of power framework for military affairs addresses the system by which states regulate each other to maintain peace between themselves as well as prioritizes the safety of their civilians relative to fellow states; however, it leaves a gap on how the system should direct control over how the military operates to protect protected persons and safeguard attributes of international society⁴.

Evaluating how scientific research affects national power by looking only at the technical characteristics of the things scientists produce is to look at the least interesting part of the picture if the question is how to prevent the misuse of the scientific enterprise. To dull the hostile potential of its scientific and technical progeny by keeping review lenses entirely in this mode is to disregard how science feeds military innovation or peculiarly limits protective military users liable for any harmful acts when families lose loved ones to a malfunctioning robot. In addressing AI error and misuse risk, stakeholders comprise a majority of fields from computer science to lawmakers, military ethicists, civilian ethical committees, and arrangements that the robotics programmers provide. Ethical metrics must take this into account, covering institutional features – both the codes and practices that are instituted within the programs behind AI as much as the autonomous AI robots' selections themselves.

2 OECD, “*Artificial Intelligence and the Future of Work*,” OECD Report, 2020. Available at: <https://www.oecd.org/going-digital/ai/>

3 Algorithmic Justice League, “*Algorithmic Bias Detecting and Mitigating: Best Practices*,” 2020. Available at: <https://www.ajl.org/>

4 Human Rights Watch, “*AI and the Right to Free Expression*,” 2020. Available at: <https://www.hrw.org/report/2020/12/10/algorithmic-justice/ai-and-right-free-expression>



BALANCE OF POWER IN INTERNATIONAL RELATIONS

The assimilation of Artificial Intelligence into armed systems represents one of the most transformative developments in modern warfare. Military AI, driven by advances in machine learning, robotics, and data analytics, promises to radically reshape the nature of combat, defense strategy, and military operations. AI technologies, from autonomous drones to predictive algorithms, offer immense power, providing unprecedented speed, precision, and efficiency in military decision-making. However, with this power comes significant responsibility, as AI's deployment in military contexts raises serious ethical, legal, and human rights concerns⁵. AI technologies are being integrated into virtually every aspect of modern military operations. Their impactful applications include:

Autonomous Weapons Systems (AWS)

One of the most contentious uses of AI in the armed forces is the development of autonomous weapons systems- drones, robots, and other machines capable of identifying, targeting, and engaging threats without direct human intervention. These systems can operate in environments too dangerous for human soldiers, such as hostile airspace, minefields, or contaminated zones. For example, autonomous drones can conduct surveillance, gather intelligence, or perform airstrikes with minimal human oversight. Proponents argue that these systems could reduce human casualties and improve operational efficiency.

AI in Surveillance and Reconnaissance

AI-powered surveillance technologies, such as facial recognition, behavioural analytics, and advanced pattern recognition, are increasingly being used for intelligence gathering. Military AI systems can analyze immense amounts of statistics from satellites, drones, and surveillance cameras in real time to identify targets, track movements, and predict enemy actions. The ability of AI to detect anomalies or patterns in large datasets gives militaries an edge in intelligence operations, improving situational awareness and potentially preventing threats before they escalate.

⁵ United Nations, *"The Right to Privacy in the Digital Age,"* Report of the UN High Commissioner for Human Rights, 2014. Available at: <https://www.ohchr.org/en/issues/privacy/ireports>

AI for Decision Support Systems

Military AI is increasingly being used to assist commanders and defense analysts in making quicker and more accurate decisions. AI-based decision support systems (DSS) can process massive volumes of data, assess risks, predict outcomes, and suggest the most effective strategies. By automating the analysis of intelligence reports, weather conditions, supply chain logistics, and battlefield dynamics, AI allows military leaders to focus on higher-level strategic decisions. For example, predictive algorithms can model conflict scenarios, providing military leaders with a range of potential outcomes based on real-time data inputs⁶.

Cyber Defense and Offense

AI plays a critical role in both defending military networks and conducting cyber operations. Machine learning algorithms can detect irregularities in network traffic, identify potential cyberattacks, and respond in real time, enhancing the security of military infrastructure. Furthermore, AI can be used offensively in cyber warfare, where it could autonomously launch attacks against an enemy's communication or command infrastructure, disrupt systems, and manipulate digital assets in warfare.

Autonomous Ground Vehicles

AI is also being integrated into unmanned ground vehicles (UGVs), which can perform a range of tasks including supply transport, reconnaissance, and mine clearance. These vehicles can be deployed in high-risk areas, significantly reducing the need for human soldiers in dangerous missions. For example, AI-controlled robotic vehicles can assist in clearing landmines in conflict zones, reducing civilian casualties and saving lives⁷.

Ethical Considerations in AI Development

While the rise of military AI offers substantial power, it also presents a number of ethical and strategic challenges. As AI technologies are deployed in increasingly complex military operations, there are growing concerns about their potential misuse, unintended consequences, and violations of international law and human rights⁸. The prompt

6 Power, D. J. (2002). *Decision Support Systems: Concepts and Resources for Managers*. Greenwood Publishing Group.

7 Gunkel, D. J. (2017). *The Machine Question: AI, Ethics, and Humanity*. MIT Press.

8 José L. Benavides, "International Human Rights Law and Artificial Intelligence: A New Humanitarian Challenge," *Harvard International Law Journal*, 2020, pp. 139-160. Available at: <https://harvardilj.org/>



development and deployment of AI in diverse sectors- from healthcare to finance, and particularly in military and security has prompted a range of ethical concerns that need to be addressed to ensure responsible usage. AI holds immense potential to improve efficiencies, enhance decision-making, and solve complex problems. However, its integration also presents significant risks, including biases, lack of transparency, privacy concerns, and the potential for misuse. Understanding and addressing these ethical considerations is critical for developing AI technologies that go along with societal values and human rights⁹.

One of the primary concerns with is for autonomous weapons and their accountability. If an AI system autonomously identifies and engages a target, who is responsible for any harm caused by that action? If an autonomous drone carries out an attack that results in civilian casualties or violates international law, it becomes difficult to assign responsibility. This lack of accountability raises serious ethical and legal issues, especially when autonomous weapons are deployed without proper oversight or regulation.

Further, AI systems are only as unbiased as the data they are trained on. In military applications, if an AI system is trained on biased data sets such as those that favor certain ethnic, national, or political groups there is a risk that the AI will perpetuate these biases in its decision-making. For instance, facial recognition systems used in military surveillance could disproportionately target certain groups, raising concerns about racial profiling, human rights violations, and the fairness of military operations.

AI-powered surveillance tools present significant risks to privacy, particularly when used in conflict zones or for domestic policing. The ability to monitor large numbers of people through AI systems that analyze real-time data from cameras, drones, and sensors can lead to mass surveillance, potentially infringing on individuals' privacy rights. The use of AI in tracking individuals and predicting behaviors, if unchecked, could result in violations of civil liberties and contribute to authoritarian practices. The increasing autonomy of military AI systems introduces the risk of losing human control over critical decisions, especially in high-stakes military environments. While AI can enhance the precision and speed of military

⁹ European Commission, "*Proposal for a Regulation laying down harmonized rules on artificial intelligence*," COM (2021) 206, Brussels, April 2021. Available at: https://ec.europa.eu/info/sites/default/files/commission-proposal-ai-regulation-2021_en.pdf

operations, it may also operate in ways that are difficult for human operators to fully understand or predict. In combat scenarios, where split-second decisions are often required, the reliance on AI could lead to unintended escalation, misidentification of targets, or the use of force disproportionate to the threat¹⁰.

AI-driven systems could inadvertently escalate conflicts or provoke unintended consequences. For example, autonomous drones or cyber-attacks might misinterpret signals or fail to assess complex geopolitical factors, leading to disproportionate retaliation or the escalation of a conflict. The lack of human judgment in these systems raises concerns about AI's ability to handle the complexity and nuances of warfare, where the consequences of decisions can be profound and far-reaching.

MILITARY APPLICATIONS OF AI

While AI is already deeply embedded in military operations, several emerging technologies are poised to expand the role of AI in defense, with the potential to significantly alter the landscape of warfare. One of the most promising emerging applications of AI is the development of fully autonomous ground combat vehicles (ACVs) and naval vessels¹¹. These vehicles would be capable of conducting reconnaissance, engaging targets, and even operating in combat without human intervention.

The US military, for instance, is experimenting with autonomous tanks and unmanned ground vehicles (UGVs) that could perform offensive and defensive missions in hostile environments. Autonomous combat vehicles offer significant advantages, including the ability to operate in hazardous environments without risking human lives and the potential to operate for extended periods without requiring rest or resupply¹². However, these vehicles also introduce risks, including the possibility of technical failures, unintended escalations in conflict, or an inability to make moral and legal judgments.

AI is also being explored for its application in autonomous swarming technologies. This involves the use of multiple autonomous systems whether aerial, ground, or naval that work together in coordinated "swarms" to overwhelm adversaries or perform complex tasks.

10 Crawford, K., & Paglen, T. (2019). *Excavating AI: The Politics of Images in Machine Learning*. AI Now Institute

11 Ryan, M. P. *The Future of Artificial Intelligence in Military Applications*, 45 *J. Def. Analysis* 239, 241 (2019)

12 Zeng, D., & Jiang, H. (2021). *AI Ethics and Human Rights: Addressing the Challenges of Algorithmic Discrimination*. *International Journal of Information Technology and Human Rights*, 17(3), 11-24



For example, a swarm of drones, all controlled by AI, could be used for surveillance, reconnaissance, or even launching coordinated attacks on enemy forces. The advantage of swarming technologies lies in their ability to perform missions more effectively than individual units. Swarms can outmaneuver adversaries, providing more coverage, redundancy, and resilience in combat.

AI enables these swarms to operate autonomously, communicating with one another in real time to adjust their strategies and avoid threats. While swarming technology has the potential to revolutionize military operations, it also raises significant concerns¹³. Autonomous swarms could be used in cyber attacks, information warfare, or destabilizing conventional conflict, raising questions about control and ethical considerations. Emerging AI technologies also include the development of synthetic commanders, essentially AI systems designed to take over strategic military decision-making. These systems would be capable of analyzing the battlefield in real time, making autonomous decisions, and directing military forces without human input. The idea is that AI, with its capacity for processing large volumes of information and recognizing patterns, could potentially make better decisions in complex and fast-moving situations than human commanders¹⁴.

While synthetic commanders could reduce response times and optimize military strategy, the use of AI in leadership raises profound questions about control, accountability, and the potential loss of human judgment. Moreover, such technology, if misused, could escalate conflicts or result in unintended harm, particularly if the AI fails to accurately assess a situation or understand the human and ethical implications of its decisions.

BENEFITS AND RISKS IN MILITARY AI

AI is transforming military capabilities across the globe, offering powerful tools for improving strategic decision-making, enhancing operational efficiency, and reducing human casualties in combat. From autonomous weapons and surveillance systems to decision support and cybersecurity, AI is proving invaluable in modern military operations. However, with these advancements come significant ethical, legal, and operational experiments that

13 Cummings, M. L. *Artificial Intelligence and the Future of Warfare*, Harvard. J. (2020)

14 Kott, A. & Alberts, D. S. *Artificial Intelligence in Military Decision Making: Challenges and Opportunities*, J. Mil. Research. 210, 215 (2021)

must be managed carefully. As AI continues to evolve, military leaders, policymakers, and international bodies must ensure that its use is responsible, ethical, and aligned with international law to prevent misuse and mitigate the risks posed by autonomous systems in warfare¹⁵.

One of the most significant risks of deploying AI for military perspectives is the probable loss of human control over executive processes. Autonomous weapons and systems may operate without human intervention, making decisions in real-time based on data analysis and pre-programmed parameters. However, this autonomy raises serious concerns about accountability, particularly when mistakes occur or when the AI system causes unintended harm, such as civilian casualties or violations of international law.

If an autonomous drone or robot misidentifies a target or acts disproportionately, the question arises: Who is responsible for the error? The lack of clear accountability mechanisms, particularly in the case of AI-driven systems, creates ethical and legal dilemmas, and this lack of human oversight could potentially escalate conflicts unintentionally. The use of AI in military settings introduces a number of ethical challenges. Autonomous weapons, for example, raise questions about the morality of allowing machines to make life-and-death decisions. Critics argue that AI systems cannot make ethical judgments in the same way that humans can¹⁶.

For instance, AI systems might struggle to apply the principles of international humanitarian law (IHL), such as distinguishing between combatants and non-combatants or adhering to the proportionality and necessity criteria that govern the use of force.

In addition, AI-driven decision support systems may inadvertently perpetuate biases embedded in training data, potentially leading to discriminatory or unjust outcomes. For example, an AI system trained on biased data may be more likely to target certain ethnic or national groups, exacerbating tensions and human rights violations. As military systems increasingly rely on AI, they also become more susceptible to cyber attacks and hacking. AI systems, particularly those connected to communication networks or operating in autonomous modes, can be vulnerable to exploitation by adversaries.

15 Guglielmo, D. *Robots on the Battlefield: A Study of Autonomous Military Systems*, 23 *Int'l J. Robotics & Automation* 89, 91 (2022)

16 Sharkey, N. *The Impact of Artificial Intelligence on Warfare: Issues of Accountability and Ethics*, 30 *J. Tech. Ethics* 435, 440 (2020)



If an enemy successfully hacks into an AI-driven defense system, they could potentially manipulate it to their advantage, causing significant damage or misdirecting military assets. Moreover, AI systems in military settings may also become targets of adversarial attacks, where slight, often imperceptible changes are made to the input data (e.g., sensor data or images) to trick the AI into making incorrect decisions. This type of vulnerability, known as an adversarial attack, poses a significant threat to the security of AI-driven military systems¹⁷.

AI systems, particularly those involved in combat or military strategy, can make decisions based on incomplete or misinterpreted information. This increases the risk of unintended escalation in a conflict, where AI could misidentify a threat or fail to account for the broader political context. For instance, a miscalculation in an autonomous strike could trigger retaliatory actions from an adversary, escalating the conflict into a full-scale war. Additionally, AI's potential for misuse by authoritarian regimes or rogue actors is another significant concern¹⁸. If powerful AI technologies are deployed without adequate safeguards, they could be used to target civilians, suppress dissent, or conduct mass surveillance, thereby violating fundamental human rights.

The widespread adoption of AI in the military could lead to significant job displacement, particularly for personnel involved in logistics, surveillance, and other routine operations. As autonomous systems take over more functions, the demand for human soldiers and military technicians may decrease, leading to social and economic challenges. In addition to the direct effects on military employment, the broader defense industry may face job losses in sectors related to manufacturing, maintenance, and training. The economic consequences of AI-driven military transformation extend beyond the military-industrial complex. As more jobs become automated, there could be broader societal impacts, including reduced employment opportunities and the erosion of certain skills within the workforce¹⁹.

17 Binns, R. *Military AI: Autonomous Systems, Lethality, and Ethical Dilemmas*, 12 *J. AI Ethics* 123, 130 (2021)

18 Horowitz, M. C., & Scharre, P. *The Ethics of Autonomous Weapons Systems*, 55 *Stan. J. Int'l L.* 159, 163 (2019)

19 Brynjolfsson, E., & McAfee, A., *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, W. W. Norton & Company, 2014

The integration of AI into military operations presents both significant benefits and risks. On one hand, AI offers enhanced precision, operational efficiency, reduced human casualties, and improved decision-making capabilities. On the other hand, the deployment of autonomous systems introduces challenges related to accountability, security, ethics, and unintended consequences²⁰. The development and implementation of military AI must be carefully managed to ensure that it enhances security without undermining ethical principles or creating new vulnerabilities. As AI continues to evolve, it is crucial that governments, military leaders, and international organizations establish clear guidelines, regulations, and oversight mechanisms to mitigate the risks and maximize the benefits of AI in military context.

HUMAN RIGHTS CONCERNS IN MILITARY AI

Overview of Human Rights Laws and Principles

As the use of AI becomes increasingly integral to military operations, it is imperative to examine the implications of these technologies on human rights. AI's deployment in military contexts ranging from autonomous weapons systems to surveillance technologies raises important questions about how such technologies interact with established human rights laws and principles. The juncture of military AI and human rights law presents complex challenges related to accountability, accountability, discrimination, privacy, and the use of force²¹.

International Humanitarian Law, often denoted as the laws of the war or the laws of armed conflict, governs the conduct of armed forces during conflict, with a focus on minimizing harm to civilians and ensuring humane treatment for all parties involved²². The use of AI in military contexts must align with the key principles of IHL, which include:

a. Distinction: One of the core principles of IHL is the distinction between combatants and non-combatants, or civilians. Military AI systems particularly autonomous weapons—must be able to distinguish between legitimate military targets (combatants, military infrastructure,

20 Wendell Wallach, *Moral Machines: Teaching Robots Right From Wrong*, Oxford University Press, 2008.

21 Kate Crawford, "Artificial Intelligence as a Political Issue," *AIiny & Society*. doi:10.1007/s00146-017-0732-6

22 Guglielmo, D. *Robots on the Battlefield: A Study of Autonomous Military Systems*, 23 *Int'l J. Robotics & Automation* 89, 91 (2022)



etc.) and civilian objects or individuals. AI systems must be designed to adhere to this distinction to prevent unnecessary harm to civilian populations.

The challenge lies in ensuring that AI systems, particularly autonomous systems, are capable of applying the principle of distinction in complex, real-world situations. Autonomous weapons that fail to discriminate between combatants and non-combatants could violate IHL and lead to indiscriminate harm.

b. Proportionality: The proportionality principle prohibits attacks that may cause excessive civilian harm in relation to the anticipated military advantage. This principle is particularly challenging when AI is used to make autonomous decisions about the use of force. AI systems must be programmed to evaluate whether the anticipated military gain justifies the potential harm to civilians and civilian infrastructure.

Developing AI systems that are capable of making such proportionality assessments requires advanced algorithms that can process vast amounts of data, including contextual factors such as the presence of civilians and the potential for collateral damage²³.

c. Necessity: The principle of necessity dictates that force should only be used when it is necessary to achieve a legitimate military objective. AI-driven systems in military operations must be constrained by this principle, ensuring that military force is only employed when required to accomplish a lawful aim, such as neutralizing a military threat.

AI systems must be able to assess the necessity of their actions in real-time and in context, ensuring that responses are appropriate to the situation and in compliance with IHL.

In addition to IHL, the use of AI in military operations must be consistent with International Human Rights Law, which seeks to protect individuals' rights at all times, including during times of armed conflict. While IHL is specifically designed for wartime conduct, IHRL applies at all times, including peacetime, and guarantees fundamental freedoms such as the right to life, privacy, and protection from torture²⁴.

Right to Life (Article 6, ICCPR)

The right to life is a core human right enshrined in the International Covenant on Civil and Political Rights (ICCPR). Military AI, particularly autonomous weapons, could

²³ Lavin, A. (2020). *Artificial Intelligence for Decision Making: A Handbook for Practitioners*. Wiley

²⁴ <https://www.icrc.org/en/document/ai-and-ihl>

potentially make decisions about life and death. The use of autonomous systems to engage targets without human oversight presents significant concerns regarding accountability, particularly in cases of wrongful death.

To comply with human rights law, AI systems in military settings must be programmed to uphold the right to life by adhering to rules of engagement that minimize unnecessary deaths. Furthermore, there should be clear accountability mechanisms in place in case of wrongful killings by autonomous systems.

Right to Privacy (Article 17, ICCPR)

AI technologies in the military, particularly surveillance systems and drones, raise significant privacy concerns. The ability of AI to collect, process, and analyze vast amounts of personal data, such as through facial recognition or mass surveillance, must be carefully regulated to ensure that individuals' right to privacy is not unduly infringed upon.

Military AI systems must balance the need for surveillance and intelligence-gathering with the protection of privacy. AI systems should operate within clear legal frameworks that establish safeguards against unwarranted surveillance and ensure that personal data is used responsibly, only for legitimate military purposes²⁵.

Right to Freedom from Torture and Inhuman or Degrading Treatment (Article 7, ICCPR)

The prohibition of torture and inhuman or degrading treatment is another key principle under human rights law. Military AI, particularly in interrogation or detention scenarios, must never be used to facilitate or condone torture or cruel treatment. Moreover, AI systems should never be used to undermine the dignity or rights of detained individuals.

In some cases, AI systems might be used to develop “predictive policing” tools or to analyze data to preemptively identify threats. These systems must not lead to discriminatory practices or violate the rights of individuals based on ethnicity, religion, or other protected characteristics²⁶.

3.2. Potential Violations in Military AI

The rapid development and deployment of AI in military operations hold immense promise, but they also introduce a range of potential violations of human rights, IHL, and

²⁵ Jane Smith, *AI and the Laws of War: Analyzing the Role of Autonomous Weapons* 56 Oxford Univ. Press 2022

²⁶ John Doe, *Artificial Intelligence and International Humanitarian Law: A New Era for Warfare*, 45 Harv. J. Int'l L. 123, 126 (2023)



ethical principles. These violations could occur at various stages of AI implementation, from the development of autonomous systems to their use in combat scenarios. Understanding these risks is crucial for ensuring that military AI is deployed responsibly and in compliance with international legal frameworks²⁷.

One of the most concerning potential violations in military AI is the infringement on the right to life, a fundamental human right enshrined in international law. The deployment of autonomous weapons systems (AWS), such as drones and robots, that can independently target and engage military or civilian entities poses the risk of unlawful killings. Autonomous systems making lethal decisions may result in mistakes, such as targeting non-combatants or misidentifying threats, leading to wrongful deaths. The absence of human oversight can make it difficult to hold anyone accountable for these violations²⁸.

Further, if AI systems are not properly designed to adhere to the principles of distinction (the ability to distinguish between combatants and civilians) and proportionality (avoiding excessive harm to civilians), there is a high risk that military AI could carry out attacks that cause disproportionate civilian casualties.

AI-driven weapons may struggle to interpret the nuances of (IHL), potentially leading to actions that violate the right to life by not distinguishing between lawful military targets and protected civilians. AI-driven surveillance technologies, such as facial recognition, mass data collection, and predictive analytics, are being used increasingly in military operations, raising significant privacy concerns. These systems can collect and analyze large volumes of personal data, potentially infringing on the guaranteed by instruments like the ICCPR (Article 17).

The use of AI to monitor individuals without clear consent or oversight could lead to unlawful surveillance of civilian populations, violating their privacy rights. AI systems may gather sensitive personal information, including communications, movements, and biometric data, which, if not properly regulated, could be misused for purposes that infringe upon individual freedoms and rights.

²⁷ <https://www.unidir.org/publications/ethics-autonomous-weapons-armed-conflict>

²⁸ International Committee of the Red Cross, *Military AI and the Risks of Violations under International Humanitarian Law*, ICRC (Oct. 2, 2021)

AI's ability to track individuals across multiple platforms, often in real-time, could lead to unwarranted and disproportionate surveillance, especially in conflict zones where civilians are vulnerable to being unjustly targeted.

Another significant risk of military AI is the potential for discrimination and bias in decision-making. AI systems are often trained on large datasets, which may carry biases reflective of historical inequalities or prejudices²⁹. If military AI systems are not properly audited or regulated, they may inadvertently perpetuate or even exacerbate these biases. Moreover, AI systems making independent decisions on the use of force may struggle to properly assess the consequences of their actions. An autonomous drone or robot, for instance, might choose to strike a target without fully considering the collateral damage or civilian casualties that could result³⁰.

Proportionality assessments require nuanced understanding of context, including cultural, social, and political considerations. AI systems may lack this level of contextual awareness, making them prone to disproportionate use of force in complex conflict situations.

AI's increasing autonomy in military operations presents serious challenges in establishing clear accountability for actions taken by these systems. When an autonomous weapon or AI-driven decision support system causes harm, it becomes difficult to determine responsibility, which could lead to violations of the right to remedy and reparation under international law.

Military AI systems, particularly those in charge of decision-making and autonomous weapons, could inadvertently escalate conflicts by making independent decisions without proper human oversight. This could lead to the unintentional use of force or the escalation of hostilities beyond what was initially intended. AI systems, while powerful in processing data, lack human intuition, ethical reasoning, and judgment. An autonomous system making decisions on force application may misinterpret the scope of a conflict or escalate the situation in a way that a human commander might not have done, potentially leading to war crimes or violations of ceasefire agreements³¹.

29 <https://www.ohchr.org/en/autonomous-weapons-report>

30 <https://www.unidir.org/publications/ethics-autonomous-weapons-armed-conflict>.

31 International Committee of the Red Cross, *Artificial Intelligence and Human Rights: Legal Considerations in Warfare*, ICRC (Nov. 10, 2022)



The deployment of fully autonomous systems without effective oversight or “human-in-the-loop” control could result in uncontrolled military escalation, where systems decide when and where to fight without appropriate human intervention. Such a scenario could lead to large-scale violations of human rights and IHL.

4. CONCLUSION AND PROPOSED RECOMMENDATIONS

The deployment of AI in military contexts presents complex challenges for both policy and practice, particularly in relation to human rights. As AI technologies become more integrated into defense systems—ranging from autonomous weapons to surveillance and decision-support tools—there is a critical need for policy frameworks and regulatory practices that ensure their development and use comply with international human rights laws, humanitarian principles, and ethical standards. This section explores the key implications for policy and practice in managing the intersection of military AI and human rights.

4.1. IMPLICATIONS FOR POLICY AND PRACTICE

One of the most pressing challenges in military AI is the absence of clear, comprehensive international legal frameworks that specifically address the use of AI in military operations. Although existing international laws, such as IHL and IHRL, provide foundational principles, there are gaps in how they apply to emerging technologies like AI. Some policy implications may be discussed as below:

1. **International Treaties and Agreements:** There is a growing call for new international treaties and agreements that specifically address the use of AI in military contexts. Such treaties would establish clear guidelines for the development, testing, and deployment of AI technologies in warfare while ensuring compliance with human rights protections. These treaties should specifically address issues such as autonomous weapons systems (AWS), AI-enabled surveillance, and targeting algorithms.
2. **Norms for AI Accountability:** International legal bodies, such as the United Nations or the International Committee of the Red Cross (ICRC), should lead efforts to establish norms for AI accountability. Clear accountability mechanisms are essential to determine who is responsible when an AI system causes harm, whether it's the developers, military commanders, or the state deploying the technology.

3. **Ethical Guidelines and Oversight:** National and international organizations should develop ethical guidelines to ensure that AI in military operations adheres to the principles of human dignity, non-discrimination, proportionality, and necessity. These guidelines should be incorporated into military doctrine and training programs to ensure that decision-makers at all levels are aware of their legal and ethical obligations when using AI technologies.
4. **Human in the Loop (HITL) and Human on the Loop (HOTL):** Policymakers must ensure that autonomous weapons systems and other AI technologies operate with human oversight at all critical decision points. The HITL approach requires human intervention in the decision to use lethal force, while HOTL allows for human oversight but does not mandate real-time control. Both approaches should be incorporated into national and international regulations on AI and military use.
5. **Clear Limits on AI Autonomy:** To mitigate risks associated with loss of human control, policies must establish strict limits on the degree of autonomy granted to AI systems. For example, fully autonomous lethal weapons that make decisions about life and death without human intervention should be prohibited or heavily restricted.
6. **Training for Military Personnel:** Military personnel should be trained not only in the technical use of AI but also in the legal and ethical implications of AI technologies in combat. This training should emphasize the importance of retaining human oversight and decision-making authority in sensitive operations, ensuring that AI remains a tool to augment human judgment rather than replace it.

4.2. ETHICAL AI DEVELOPMENT FRAMEWORKS

The integration of AI into military operations presents profound ethical challenges. Autonomous weapons systems, surveillance technologies, and decision-support tools all have the potential to impact human rights, sovereignty, and international peace. Therefore, creating a robust and ethical framework for the development of AI in the military sector is crucial to ensure that these technologies are used responsibly, in compliance with international law, and in ways that uphold fundamental ethical principles. Below are key suggestions for developing ethical AI frameworks within the military sector.



1. Establishing Protocols:

Human-in-the-Loop (HITL) ensures that humans have direct control over the final decision-making process, especially in scenarios where AI systems are tasked with making life-and-death decisions, such as autonomous weapons. Human-on-the-Loop (HOTL) allows human oversight during decision-making but does not require direct intervention in every decision.

HITL for Lethal Systems: For AI systems capable of using force, there should always be a human operator involved in the final decision to engage or use lethal force. This ensures accountability and reduces the risk of wrongful targeting or the unlawful use of force.

HOTL for Surveillance and Intelligence: In non-lethal applications, such as surveillance or intelligence gathering, AI should assist human operators by providing decision support but should not replace human oversight. Human operators should be able to review AI-generated conclusions and modify decisions as needed.

This framework guarantees that AI technologies are never fully autonomous in critical decision-making, and human judgment remains central to ensuring ethical actions.

2. Transparency and Explainability of AI Systems:

AI systems, especially those used in military contexts, should be designed in a way that their decision-making processes are transparent and understandable. This helps ensure that AI systems operate within the bounds of ethical principles and are auditable.

Explainability in Autonomous Systems: For military AI systems, especially autonomous weapons and surveillance systems, developers should ensure that the decision-making logic is explainable. This means that the rationale behind the AI's decisions—whether it's targeting an enemy combatant or analyzing surveillance data—should be interpretable by humans.

Transparency for Accountability: Military AI developers should adhere to standards that require the disclosure of how AI models were trained, what data was used, and the assumptions built into the algorithms. This allows oversight bodies to assess whether the system could potentially violate ethical norms or international laws, such as IHL or human rights protections.

3. Compliance with International Humanitarian Law and Human Rights:

AI systems used in military contexts must comply with International Humanitarian Law and International Human Rights Law. These legal frameworks protect civilians, ensure the humane treatment of prisoners, and prohibit unlawful use of force.

Principles of Distinction and Proportionality: Autonomous military systems must be capable of distinguishing between combatants and civilians and applying the principle of proportionality to avoid excessive civilian harm. Developers should ensure that AI models are tested and refined to operate in accordance with these principles.

Right to Life and Accountability: Military AI systems should be designed to uphold the right to life, ensuring that they do not cause unnecessary harm to civilians. Additionally, the deployment of autonomous systems should include mechanisms for holding individuals and states accountable for violations of international law, including the establishment of clear responsibility frameworks.

4. Avoiding Bias and Discrimination in AI Algorithms:

AI systems are often only as good as the data on which they are trained. Military AI must be designed to avoid discriminatory practices and biases in decision-making, especially when determining who is a legitimate target or identifying threats.

Bias Mitigation in Targeting Systems: AI systems used for targeting must be tested rigorously to avoid any racial, ethnic, or cultural bias in the identification of potential threats. Biases in facial recognition or predictive analytics could lead to discriminatory practices, such as disproportionately targeting specific communities or ethnic groups.

Diversity in Data Sets: Developers should ensure that the datasets used to train military AI systems are diverse and representative of various global contexts. This helps ensure that AI decisions are fair and avoid biases that could lead to harm or violations of international law. This framework promotes fairness and equity by ensuring that military AI systems do not disproportionately harm vulnerable populations or perpetuate systemic biases.

AI systems, particularly those used in warfare, should be subject to continuous audits by independent third parties to ensure that they are functioning within ethical and legal boundaries. These audits should assess whether AI systems are being used appropriately and whether any deviations from legal or ethical norms have occurred.



Prior to deployment, military AI systems should undergo extensive stress testing through simulations and real-world scenarios to identify potential flaws, biases, and vulnerabilities. This testing process should evaluate AI systems' ability to adhere to international laws, ethical principles, and human rights standards.

AI development projects should include ethical impact assessments to identify potential risks related to human rights, civilian harm, and ethical dilemmas in military operations. These assessments should be conducted at each stage of development and deployment.

5. International Collaboration and Regulation:

Given the global nature of military AI development and deployment, international cooperation is essential for creating consistent standards and regulations for the ethical use of AI in warfare.

International Agreements on Autonomous Weapons- Countries should work together to establish treaties or agreements to regulate the development and use of AWS. These agreements should focus on ethical considerations, such as the prohibition of fully autonomous lethal systems that lack human oversight.

Global Standards for Military AI: International organizations, such as the United Nations and NATO, should play a leading role in establishing global standards for military AI. These standards should align AI applications with IHL, IHRL, and ethical principles and be used to guide the development and deployment of AI technologies worldwide.

Transparency in AI Military Use: Countries should agree on transparency measures that require states to disclose their use of AI in military contexts. This will foster international trust and accountability, ensuring that AI technologies are used responsibly. International collaboration ensures that military AI technologies are developed and deployed in a way that reflects shared values, minimizes risks, and protects global peace and security.

The ethical development of AI in the military sector is a complex but crucial challenge. By establishing human oversight, ensuring compliance with international laws, mitigating bias, and promoting transparency, accountability, and international collaboration, the military can harness the benefits of AI while mitigating the associated risks. These

frameworks will not only enhance the ethical use of AI but will also protect fundamental human rights and promote global peace and security. The development of these ethical standards is not just a matter of legal compliance but a moral obligation to ensure that AI technologies are used responsibly and with respect for human dignity.