The Transformative Role of Artificial Intelligence in Conflict Resolution and Peacekeeping

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Introduction

The dynamic development of Artificial Intelligence (AI) is profoundly impacting everyday lives, presenting a multitude of possibilities and challenges. In the scholarly landscape, Omar (2023) highlights the impact of AI on academics and practitioners as it introduces novel approaches in the field of research. His research explored AI's role in assessing human behavior, recording and storing human intelligence in information technology systems, and subsequently programming it to execute tasks traditionally performed by humans effectively. In the contemporary era, AI and autonomous systems are becoming an integral part of our lives, and the prospect of an AI-assisted society is imminent. To harness the potential of AI, it is thus imperative to adopt a proactive strategy involving the implementation of policy frameworks, structural measures, and monitoring systems, leading to a positive synergy between AI and human intelligence.

Considering the wide range of AI, it has transformed various spheres, from robotics to autonomous vehicles and advanced language models. Its rapid development is comparable to milestones like the invention of the wheel or the discovery of electricity. However, the discourse on AI is predominantly driven by engineers and tech firms, lacking comprehensive input from the social sciences. In the race for AI advancement, the creators of AI applications are more focused on building tech, often overlooking the implications and consequences of their experiments. Their primary interest lies in technical development, sometimes neglecting thoughtful consideration of innovations' potential impacts and ethical considerations. This knowledge gap underscores the need for a more balanced and inclusive approach to navigating the evolving landscape of AI.

AI's Evolution in Defense: From Data-Driven Learning to Deep Learning

While AI has the distinctive potential to revolutionize military strategies, ammunition systems, and operations, it simultaneously plays a pivotal role in enhancing international and domestic peace processes. As Yamakawa (2019) noted in his study, he explored the possibilities of using AI to achieve peacekeeping among human

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societies, which can be pivotal in maintaining peace. He proposed a universal AI-based system that can arbitrate conflicts in human societies by focusing on shared goals and common values.

It is also observed that over the years, countries allocated significant funds mainly for research, focused on integrating AI and cyber technologies to enhance their defense capabilities. From Cracking Germany's Enigma machine in the 1940s to spotting 6,000 new craters on the surface of the moon, AI has shifted to a data-driven approach, where computers are fed with large amounts of data and are programmed to learn and draw conclusions from them (*Artificial Intelligence Timeline*, 2019). In technological evolution, the Dynamic Analysis and Replanning Tool (DART), an AI program used by the US military, was the first of its kind intended to deal with logistics issues (Goswami, 2021).

The next leap after data-driven machine learning is 'deep learning' pioneered by Geoffrey Hinton, also known as the 'godfather of AI.' In the domain of deep learning, the simplification of data pre-processing sets it apart from traditional machine learning. These algorithms efficiently handle unstructured data, like text and images, automating feature extraction and diminishing the need for human experts (*What Is Deep Learning?* n.d.). It enables computers to mimic human thoughts, emotions, responses, and experiences using real-time sensory data from cameras, sensors, and microphones to interpret, process, and execute autonomously. This technology has the potential to be misused for intentional and unintentional violence. They do not follow traditional security paradigms of deterrence and mutually assured destruction but rather encourage pre-emptive offense. Therefore, the potential for AI-assisted and powered warfare underscores the need for strategies to counter, manage, and contain full-scale global, interstate, or domestic conflicts.

The Impact of AI on Conflict Transformation and Peace Efforts

The increasing prevalence of AI technology on the battlefield requires urgent legislative measures and regulatory frameworks to address and manage its implications adeptly. AI holds significant potential in shaping the future of peace processes, encompassing conflict prevention, peacekeeping missions, and peacebuilding efforts.

The research conducted by Schreiner (2023) highlights the significant applications of AI in the battlefield, with four primary areas of focus: logistics, reconnaissance, cyberspace, and warfare. As of the research, AI applications in the first three scenarios are already in advanced stages, either in use or undergoing testing. Using AI in military operations offers several benefits, potentially limiting human costs, increasing precision, enabling remote or autonomous operations, and enhancing overall efficiency. The applications of AI in the military span a wide range of functions, including strategic decision-making, data processing and research, combat simulation, target recognition, threat monitoring, drone swarms, cybersecurity, transportation, casualty care, and evacuation (*Military Applications of AI*, 2023). Fully autonomous kamikaze drones, referred to as Lethal Autonomous Weapons Systems (LAWS), are already being used on a small scale. These autonomous weapons represent the next revolution in warfare.

The complexity and ease of constructing and activating AI applications in cyber warfare are highly notable. As emphasized by Johnson and Krabill (2020), integrating AI systems with existing cyber offense tools can act as potent force multipliers.

Moreover, distinguishing truth becomes increasingly challenging as deep fakes and generative AI gain prominence. The manipulation of images, videos, and audio opens the door for easier dissemination of misinformation and disinformation. This introduces an additional layer of unpredictability and complexity, hinting at a scenario where guaranteed destruction may replace the concept of mutually assured destruction. In November 2021, UNESCO took a ground-breaking step by issuing the inaugural 'Recommendation on the Ethics of Artificial Intelligence.' This document, acknowledged by all 193 UN member states, delves into crucial aspects of human rights (*Ethics of Artificial Intelligence*, 2023).

The document on ethics is a ground-breaking success, as it was observed that when data given to AI systems is marked by a substantial degree of recklessness, it leads to widespread consequences. One of the critical concerns that has emerged is the presence of racial and gender biases in specific AI applications, primarily stemming from misrepresentative and discriminatory data. The acknowledgment of human biases in gender and race present in global data and media production challenges the perception of AI as a neutral and unbiased third party.

Research like that conducted by Buolamwini (2019) has highlighted significant biases in AI systems, particularly in facial recognition applications. Notably, AI systems perform better on male faces than female faces, and error rates are exceptionally high for darker-skinned women. This underscores the importance of addressing biases at various levels, including the data used to train AI systems, to ensure fair and equitable outcomes.

The document on ethics reflects a growing awareness within the AI community about the potential societal impact of AI technologies and the need for responsible development and deployment. Addressing biases and promoting fairness in AI applications is essential for fostering trust in these technologies and ensuring their benefits are accessible and equitable for diverse user groups. Ongoing research, policy, and industry standards efforts aim to mitigate biases and promote ethical considerations in AI development and deployment.

Addressing the mentioned challenges and limitations confronting AI systems, such as explainability, responsibility, fairness, and misuse, requires a proactive approach. As discussed by Lawton and Wigmore (n.d.), a comprehensive solution involves implementing a robust policy framework, proactive ethical education, and efficient monitoring systems is required. Also, as mentioned earlier, the role of the United Nations can be significant in establishing the foundations to confront AI challenges and facilitate a seamless transition to a globally assisted AI system, given the technology's boundless potential for sustainable development.

Many countries lag in the development and adoption of AI, and a handful of states dominate the AI race, with private sectors significantly influencing development. Governments within these states often lack adequate guidance when dealing with AI issues. In it, the UN's intervention is crucial to formulating an international AI governance framework that transcends borders and jurisdictions. A key focus should be on halting or restricting the development of lethal autonomous weapons systems (LAWS) and AI-powered cyber tools, treating them akin to weapons of mass destruction. To mitigate potential harm and mishaps, the UN should foster principles of transparency and dialogue among all states under its leadership.

In the words of UN General Secretary Antonio Guterres, "AI is being put to work in connection with peace and security, including by the United Nations. It is increasingly being used to identify patterns of violence, monitor ceasefires and more,

helping to strengthen our peacekeeping, mediation and humanitarian efforts" (*Secretary-General's Remarks to the Security Council on Artificial Intelligence*, 2023).

AI in Peacekeeping and Conflict Resolution: Enhancing Security and Tactical Capabilities

The potential impact of AI in conflict prevention is vast. Intelligent surveillance systems can play a pivotal role in identifying instances of escalating hate speech or the presence of violent language. Over time, the patterns of violence and hate will be identified with better accuracy, creating a universal monitoring system that can score and evaluate potential conflict zones with increasing efficiency and precision. Findings and learnings from one part of the world can be used in another continent without much capital or intensive training. A uniform international monitoring system would make governments more aware of the situation within and outside their borders, resulting in timely intervention. Furthermore, translation and contextualization of information can be done instantaneously, curbing the language barrier. This real-time information processing improves forecast systems that allow for identifying conflict patterns.

Furthermore, AI can transform conflict resolution, presenting a unique blend of consistency and impartiality. By Processing data in binary terms, AI systems serve as invaluable tools for mediators, providing real-time, context-rich information during negotiations. This wealth of data will enhance transparency, trust, and cooperation between conflicting parties, enriching the resolution process. Additionally, leveraging AI as a supportive tool will enhance the effectiveness of human mediators, ensuring that the conclusions drawn are aligned with ethical considerations and contribute to a more informed and equitable resolution of conflicts.

Similarly, in the dynamic landscape of AI and conflict resolution, the emergence of CogSolv technology is highly significant. CogSolv can model how different parties might react in specific scenarios, enabling it to simulate and understand potential responses from opposing groups. This capacity facilitates persuasion and dialogue in conflict situations, with CogSolv working to generate win-win scenarios and enhance the overall outcomes of conflict resolution efforts. By delving into the intricacies of human interaction and emotion and getting deep into how humans interact and feel, CogSolv is shaping to be a real game-changer in bringing understanding and cooperation to conflict resolutions (Olsher, 2015).

While in peacekeeping activities, AI is very significant in making human lives more secure. For instance, in Peacekeeping missions, autonomous drones can secure areas, provide real-time data, and mitigate troops' causalities. The role of peacekeepers in patrolling exposes them to potential terrorist attacks, making them vulnerable. The integration of AI would serve as a protective measure, reducing the risk to human capital and enhancing overall safety in such operations.

By leveraging advanced technologies, AI can augment surveillance and threat detection capabilities, enabling peacekeepers to navigate challenging environments with heightened awareness. The deployment of autonomous systems and intelligent algorithms can assist in identifying potential threats; the AI-generated scenario-based exercises are one practical example that enhances soldiers' tactical abilities. Likewise, machine learning analysis can provide actionable and tactical suggestions on a much more grass-roots level than ever (Pasligh, 2019).

Conclusion

In conclusion, the advent of an AI-assisted or fully autonomous future appears inevitable. As we stand at this technological crossroad, it becomes a duty and responsibility of the international community to comprehend the trajectory of AI's role in conflict resolution and peacekeeping. Acknowledging the transformative potential of AI, it is imperative to deploy proactive countermeasures and establish robust policy frameworks. This strategic approach aims to mitigate the potential harms and violence associated with AI and machine learning, promoting a harmonious coexistence between technology and the pursuit of global peace and stability.

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