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US China Technological Competition and The Use 0f Artificial Intellignce in Military Applications

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Abstract

This study explores the increasing importance of Artificial Intelligence (AI) in the United States' and China's military competition with a particular emphasis on the implications for contemporary warfare, strategic stability and geopolitical competition. Autonomous weapons systems, machine-learning models, predictive analytics and cyber warfare tools are all increasingly being part of the defense approaches of both countries. The United States favors the promotion of innovation in military artificial intelligence, with partnerships with civilian technology companies, while China has a more centralized "intelligentized warfare" strategy reinforced by military-civil fusion. This study is done using the qualitative comparative research design where secondary data are defense reports, literature and think tank analyses. The results show that they are spending a lot on AI-powered military technologies in their own countries; by 2025, the combined annual expenditure is expected to exceed $35 billion. The study suggests that in future military operations, AI will both optimize the efficiency of armed forces and raise threats of escalation, ethical dilemmas, and security threats to the world.

Keywords

Artificial Intelligence (AI), Algorithmic Warfare, Autonomous Weapons Systems, Drone Swarm Technology, Intelligentized Warfare, Military Modernization, US–China Technological Competition,

Introduction

Artificial Intelligence (AI) is one of the most game-changing technologies of the 21st century, which could transform the world of economics, the way we govern and the complex world of security. Besides intelligence-handling and autonomous decision-making or monitoring precision, AI is also a significant multiplier in the military sector contributing to enhancing on-the-battlefield efficiency. The United States and China, both two countries that have emerged as the leaders of the field, are setting the examples in use, by utilizing AI in the military systems of their nations, leading to a battlefield that is both highly automated and algorithmically controlled, as well as data-driven. In response to this change, there has been a growing concept

of 'algorithmic warfare' that integrates artificial intelligence into the decision-making and success of military operations (Kumar and Mehra, 2025).

This study's background is based on the increasing strategic rivalry between the United States and China in high-tech areas, such as artificial intelligence, semiconductors, and quantum computing and autonomous systems. The two nations have greatly put more money into military AI studies and development since 2024. The United States has been working on boosting its defense technologies and capabilities by leveraging big tech companies like Microsoft, Google, Amazon, Nvidia, and OpenAI, bringing AI to its intelligence analysis, predictive logistics and autonomous drone programs. In the United States, the DoD is believed to be allocating approximately $18–20 billion annually on military AI - related projects, with some programs, for example, the Replicator, intending to deploy thousands of robot systems in numerous parts of the world that are considered as high risk areas.

In contrast, China has a more centralized and state-driven approach to implementing AI, in which autonomous weapon platforms are being "intelligentized", military command systems are being fully integrated, and systems of surveillance, cyber warfare are being powered by AI. China's military-civil fusion policy rapidly scales up the creation and deployment of civilian AI technologies for military applications, such as drone swarms, facial recognition surveillance systems, and AI-driven command-and-control. China is investing $15 – 18 billion annually on military AI – with an aim to closing the technological gap with the U.S. and removing their future strategic disadvantage against the U.S. (Disarmament, 2025).

Artificial Intelligence (AI) has seen its use become more militarized, and that poses a problem that is the focus of this study. While AI can enhance military efficiency and effectiveness, it also presents significant risks, including the potential for flawed algorithms, cybersecurity vulnerabilities, and unintended consequences in the event of a conflict, for example, unintended use.While AI can improve the efficiency and effectiveness of military operations, it also comes with many risks, such as the possibility of algorithmic failures, cybersecurity vulnerabilities, and unintended use of AI in the event of a conflict. With the United States and China vying to progress the development of military AI, there is a growing concern that a new technological arms race might be underway in an effort to continually advance the evolution of military technology with little regard for adequate international oversight and governance. This is harmful to strategic stability uncertainty and downplays the chance for conflict to get out of hand because of autonomous machines that move at machine speed. This research aims to critically examine the implications of the military application of AI in the USA and China technological rivalry, and the potential of AI in today's warfare and global security. The study will seek to understand how AI will influence military doctrines, on-field operations, and geopolitical relations between the two countries. It also aims to explore ethical, legal and strategic challenges of the use of AMS and miltech products featuring AI. This work centers on the developments beyond 2024, giving a current perspective of the rapid evolution of technologies influencing the defense strategies of the world (Csernatoni and Broeders, 2025).

This framework highlights the impact of AI technologies on U.S.-China military competition, including the innovation and defense investments, cybersecurity, and military doctrines that drive modernization, strategic dominance, deterrence, and the efficiency of the battlefield. The secondary research involves a qualitative and quantitative comparative analysis of the military AI competition between the USA and China. Uses deductive reasoning and case studies and secondary sources to analyse strategic, technological and ethical implications military.

Literature Review

According to Hunter and Henningan (2024) the possible contribution of Artificial Intelligence (AI) to the global balance of power in the future has been discussed on several studies. While the findings from these studies are helpful, no information was available regarding the actual use of and integration of AI technologies in militaries of the major powers. In this study, we will discuss the implementation of AI in the militaries of the United States, China and Russia, as well as their potential impacts on the future of AI, global military rivalry and international security. We discuss the latest advances in the U.S., China and Russia around the use of AI technology in the military and hold expert interviews with top military and academic AI experts from the U.S., China and Russia to learn more about what is currently being developed in these three major powers states and its impact on global security (Hunter and Henningan, 2024). In 2024, the terms of orthodox deterrence are explored through these lenses, given Pakistan and Iran's fast advancement in military technology and developments, specifically on the edges of Artificial Intelligence (AI). The world of modern warfare is changing at a much faster pace with more high-tech innovations surrounding the globe and artificial intelligence technology taking a toll in many sectors of modern warfare. AI is illustrated by technologies like robot navigation systems, which have been enabling AI on other planets, like NASA's Mars rovers Spirit and Opportunity, to plan and make decisions on their own, just like a human. The method of this research employes critical analysis approach to describe the nature of modern wars between the US and China. Implementing AI in warfare has some challenges regarding the national security and command.There are also some questions regarding national security, command of the army, international stability due to the use of AI. However, strategic rivalry between the USA and China can impact conventional deterrence in a variety of arenas. In this ongoing war between Ukraine and Russia, the importance of such AI tools, including drones, satellites, and cyber technologies, in modern warfare is starkly evident. In this paper, the authors are exploring these developments to raise awareness of the implications of AI and emerging technologies for traditional deterrence approaches and the new shape of security and power in the 21st century (Waseem and Malik, 2024)

In 2024, Nike Retzman describes this chapter as being about production and effects of comparisons in security debates over the consequences of technological change. It has a particular focus on artificial intelligence (AI), threading through its discussions a sense of how technological innovations affects the distribution of power internationally and how that affects states' foreign policy decisions. Meanwhile, there is a growing discussion on whether AI is significant for politics in the world, and little focus on political actors' discursive interventions that make it possible to first interpret the technologies and inject them with meaning, where they have a power question. This chapter suggests that the linked suit of narratives and comparisons contribute to the 'race to the centre of AI' between the US and China. To this end, it will study how the example of the US National Security Commission on Artificial Intelligence (NSCAI) is doing it. In particular, it looks at the policies and policy documents that will be discussed in the presence of the Commission, and tries to shed light on subsequent actions taken by the US government. Results show that the specific form of describing and comparing states with reference to their AI use not not only explains behaviour and support the competition, but also shape the US policies (Nike Retzmann, 2024). According to Tyschuk, this study examines how strategic deterrence and adapt IHL may be impacted by the adoption of GAI in 2026. It poses two questions: (1) what impact does GAI have on deterrence between the United States and the People's Republic of China (PRC); and (2) how well do existing international legal frameworks control the export, deployment, and use of military systems involving AI? It comprises a

comparative analysis of existing defense doctrines, a quantitative defense artifices-related funding trends lens and a foresight analysis to select the possible development paths for a defense strategy. Researchers conclude that GAI is contributing to the convergence of military activity in the cyber domain, outer space, and unscrewed systems, and the development of a technology-focused deterring approach utilizing autonomous platforms and integrated decision support architectures. It makes specific mention of the nature of the legal gaps, including in ongoing arms control and IHL treaties, especially export control (excluding the UN Framework Action on concealed conventional weapons) and attribution and accountability regimes, and weak verification of rules. The article suggests several proposals for pragmatic solutions, such as transparent and strict certification and testing requirements for high-risk AI systems, multilateral monitoring and verification frameworks, and the incorporation of ethical and accountability principles into national defense doctrines. The issues of deterrence stability and law making in the case of quick spread of GAI are explained (Tyshuk, 2026).

In 2025, the global competition is being fueled by new and disorienting technologies, such as artificial intelligence, that are transforming the course of world power. This article analyzes the role of the ever-growing relevance of AI for the defense competition between the major powers of the United States and China. It presents scenarios of such competition to 2050; “scenarios” serve as vehicles of information and explanation on how such competition will differ depending on the different scenarios and what effects those will have on smaller countries, as they are pressed into mechanistic adaptation to the changing context that these processes bring into existence. The scenarios can not only indicate a succession of potential futures, but also a national security planning method to develop proactive national security policies in the changing international situation. With technological innovation and strategic competition, smaller countries are subject to challenges and opportunities as they search for their own way. The suggested recommendations seek to “even the playing field” and make sure that those states do not only meet the challenge of AI in the military arena, but also capitalise on the opportunities created by a technological evolution. The results reported herein can be used as a foundation for national security strategies even in face of limitations with institutions and infrastructure. AI technologies (Colmenarez, 2025) will drive the dynamism of a complex, changing arena through which decision makers will have to navigate and act effectively. In this paper, for the year 2025, we focus on AI as a strategic frontline of engagement in the geopolitical and economic competition between the West and China and other nations around the world. It puts the current AI rivalry into perspective, in a wider historical and economic timescape, where there are parallel paradigm shifts in globalisation, power and technological innovation going on. The conversation highlights aspects of the development of AI and its consequences for value chains in the global economy, sealing of new economic and social structure and polarization of the United States and China. BRICS and Africa countries are viewed as significant powers in the new multipolar global power structure of the new emerging economies. Additionally, the study explores the issues that arise from the use of AI in national security, economic planning and international governance, highlighting the role of international collaboration in managing the potential dangers and opportunities rooted in this game-changing technology. This paper seeks to understand the trends and forecasts to see how AI will shape the 21st century geopolitical game.This paper explores recent progress and forecasts looking ahead to understand how AI will impact the geopolitical landscape in the 21st century. (Marino, Stilo and Serra, 2025). In this study, Syed and Farooq in 2025 surveyed the Artificial Intelligence and role of Artificial Intelligence in China's and the USA's foreign policy. How Artificial Intelligence plays a crucial role in U.What foreign policy is S's and Chinese foreign policy? In this regard, S and China have the domain expertise to offer

revolutionary support in terms of data analysis, accurate modelling and strategic decision making on the part of U.S and China foreign policy?" This chapter highly admire Realism theory and can used to comprehensive using artificial intelligence in technological advancement and diplomatic relations capabilities to increase their power for secure their national interest. With the purpose of giving readers a comprehensive understanding of historical development of AI use in the US and Chinese foreign policy decision making processes, this chapter will synthesize, use, and analyze case studies, archival research, and content analysis in a qualitative research methodology. The increasingly complex level of integration of artificial intelligence (AI) into the foreign policies of key nations including China and the US is highlighting a diverse landscape of opportunities and challenges. This chapter is a look into the ways in which AI can be applied to U's foreign policy.S and China .How it is involved and plays a significant role for making their foreign policy (Syed and Farooq, 2025).

Research Questions

This study will focus on the following research questions:

- How is artificial intelligence being used for military advancement in the US-China technological competition?
- To what extent can international law and regional institutions manage disputes and maintain stability in the South China Sea under a multipolar international system?
- What are the ethical, geopolitical and security implications of the rise of Artificial Intelligence in warfare globally?

Theoretical Framework

The theory, which suggests that the military strength of the rival states changes and proliferates, based on the development of the other states military strength is Arms Race Theory. It is quite pertinent to the so called “tussle between the US and China as both are engaged in constant technological race against one another, particularly with regard to AI, autonomous systems and cyber warfare. In recent years, Mr. Basa noted, the U.S. military has been a big buyer of research and development for various AI initiative projects and as of 2025, has a projected R&D budget of $18–20 billion annually. But China has been spending about $15-18 billion annually to research military AI, such as the expansive weaponized platform known as Drone Swarms and the intelligent surveillance and automated command network, Delvetool (2024).

It is an arms race type competitive pattern with the opposite reaction of the two states using the alternatively developed technology. The U.S. “Replicator Initiative” to put thousands of autonomous systems in various domains is being outpaced by China's fast expansion of drone swarm technology and military practice using AI. The leaps and bounds these advances have taken not only indicate that both of them are modernizing their armies, but they also show that they are innovating, that is, they are not letting themselves get on any strategic side. In this way Arms Race Theory provides for the former a most convincing explanation for the unprecedented speed at which AI is advancing into defence systems, for the latter, that both states are investing heavily in the speed with which they innovate their defence systems as well as in their scale and autonomy (Rokvić, 2024).

According to the theory of Technological determinism, technology is equal to the social, political and military revolution. This theory also argues that the use of technology is not merely a tool for performing actions or doing something; it is also a utilitarian that helps shape and dictate both the organization of power and the manner in which a society fights a war. In this research, AI is viewed as the catalyst in the transformation of the military architecture and strategies of the future. AI has transformed the nature of warfare in the military realm. For example, Pentagon computer systems reportedly shorten the time needed for intelligence

gathering, which can be as much as 60-70% faster for decisions to be made when they are needed in the heat of battle. Likewise, China's AI-powered surveillance networks sift through extensive amounts of real-time data on the battlefield to help direct AI-driven targeting (Naeem, Smith and Thomas, 2025).

Military operations are also fundamentally changing with the introduction of these AI-powered machines, which range from machine learning algorithms to autonomous drones and predictive logistics systems. Military decision-making is now revolutionized thanks to AI tools such as machine learning algorithms, AI drones, and predictive logistics, reducing human interference and increasing effectiveness. Technological Determinism Theory: Technology independent influence on the organization and activity of military institutions. Moreover, AI is shaping military strategies, too. If in the United States mind the focus is on the "humans-machines teaming", then, in the minds of China, the focus is on "intelligentized warfare" which nets quicker and more automated decision-making come to realization with human input and AI's knowledge. These differences underline the evolution of strategic outlook and defence policies that unfolded in both countries as they moved from a civilian to a military sector in the era of technological advancement (Bukhari, 2024).

Conceptual Framework

This study's conceptual framework depicts the connection between the military competition between the United States and China, and the role of Artificial Intelligence (AI) technologies. Military/strategic competition is the dependent variable, while AI technologies is the independent variable. The technologies discussed are autonomous drones, machine learning systems, predictive analytics, surveillance technologies, AI (command-and-control) platforms and cyber AI systems. They have multiple impacts on military modernization: increase the battlefields' awareness, enhance the information processing capability in the battlefields, accelerate the battlefields' operation, better improve battlefield autonomous decision making. According to reports, Pentagon AI Systems assisted in decreasing the time required for intelligence analysis by up to 60-70 percent, while China's AI drone swarm programs were used in starting a new level of autonomy in military exercises with massive coordination. The military use of AI is a total of $35+ billion per year for both countries, and is a new strategic catalyst. The other components of the framework are factors in-between; such as defense investments, technological innovations, military doctrines, as well as in the ethical aspect, issues related to cyber security and international rules. These are some of the factors that can be considered when assessing how effective these types of AI technologies can be used for military dominance and geopolitical influence. This study was based on Arms Race Theory, Technological Determinism Theory and Network-Centric Warfare Theory (Shahrukh, 2025) to understand the changing definition of war and the role of deterrence and global military balance in algorithmic warfare.

Research Methodology

The study is a secondary one wherein a qualitative and quantitative comparative approach has been used for the study of strategic technological competition between U.S and China on the usage of Artificial Intelligence (AI) in military use. The method applied is qualitative due to the goals of the study are to explore the complicated dynamic of geopolitical, strategic, ethical and technological that can't be measuring statistically and not aimed at determining cause and effect relationship. The approach allows for a deeper investigation of the implications of AI on existing military thinking, force designs and deterrence strategies of both states. The approach used is a deductive reasoning approach and the theoretical frameworks that are used are well-formulated theory, such as Arms Race Theory, Technological Determinism Theory, Network-Centric Warfare Theory and Deterrence Theory, which are used as lenses to assist in

the interpretation of empirical developments. It enables the systematic linking between "pure" theoretical understanding and tangible results of autonomous systems, cyber-wars, surveillance systems and AI-based command and control networks after 2024. Under this paradigm, the U.S. way of decentralised defence innovation is examined, which is based on close collaboration among the U.S. Department of Defense and the private technology firms like Microsoft, Google, OpenAI and Nvidia. By contrast, China is studied in the backdrop of the focal doctrine of "intelligentized warfare" as well as the "military-civil fusion" strategy, through which the civilian technological advances are incorporated into military modernization (Shahrukh, 2025).

Due to security concerns, military AI systems and operational data are classified, sensitive and restricted, only secondary data can be utilized in the study. Secondary data is collected from various reliable and authoritative sources, for the reliability and triangulation of findings. They can be official government documents like those created by the U.S. Department of Defense, Congressional research papers, defense/international security institute publications such as SIPRI and NATO. Finally, the volume features policy-rich and policy-analytic perspectives and insights from well-known research and analysis from RAND Corporation, CSIS and the Center for a New American Security (CNAS). Incorporation of peer-reviewed academic journals, policy briefs, open source intelligence (OSINT) reports have been added from 2024 onwards to track latest developments in the field of AI warfare. This assessment of these three factors also has a structured comparative case studies research design, and its emphasis is from development of U.S. military modernization whose intelligentized weapon systems including Replicator program, Integration of Autonomous Systems (IAS) and Intelligentized Warfare strategy (Intelligentized Warfare, 2024) of China, and from international evolution of autonomous weapons systems and its possible consequences to arms control regimes and global security.

AI as a Strategic Military Advantage

The findings show that the U.S. and China consider AI to be a military strategic "must-have" that could provide an edge in times of war. When it comes to military use, the application of AI technology improves the efficiency in operation, promotes the speed of decision making, intelligence analysis, and self-coordinating performance. A USA priority is advanced AI integration, primarily with the private tech companies such as Microsoft, Nvidia, OpenAI, and Google. In contrast, the Chinese has a centralized state-driven model, the "intelligentized warfare" doctrine, which goes toward enabling a speedy deployment of AI systems—in China, being implemented through militarily oriented civilianization policies. By 2025, the USA is expected to invest approximately $18-20 billion per year on military AI initiatives, whilst China is estimated to spend almost $15-18 billion on military AI initiatives over the same period. These data suggest higher technological sophistication in the U.S. and a speedy convergence to this sophistication by China through aggressive financing its way into and the fast rate of implementation of technology (Shahrukh, 2025).

Autonomous Weapons and Drone Warfare

One of the most significant findings is the ability of both sides to forgo use of any other weapon system. The future of military modernization is here as with more autonomous drones, unmanned navy systems, robotic ground vehicles and targeting system with AI.No, it's not just a question of old hardware replaced with the latest and greatest; it's a matter of how to prepare for the future of military modernization, by which I mean the end of a one-man operating unit in many instances.But it's not only about the replacement of old drills with the latest and greatest; it's about how to ready oneself for the future of military modernization, by which I mean the age of the autonomous drone, the unmanned naval system, the robotic ground vehicle, and the AI-assisted targeting system. Called the Replicator Initiative, the U.S. government's solution to

countering the rise of the Chinese military in the Indo-Pacific is to launch thousands of cheap autonomous land-, sea and air-based systems. The systems are designed to be able to communicate with one another on the battlefield and coordinate in real time around AI. The seamless technologies of swarms of drones and autonomous combat systems have been a major target of Chinese investment. Military exercises by the PLA reportedly used hundreds of drones in such a way that they were all connected and programmed with AI for reconnaissance and simulated attack purposes since 2024. According to evaluations, a large reduction in the operating danger for human soldiers, as well as an increase in military efficiency, can be achieved with autonomous systems. Academic and military experts fear though that situations may make fits of self-reliance too easy to get out of hand in a conflict, and that algorithms might make wrong decisions while engaged in warfare (Bratu and Freeland, 2025).

AI and Battlefield Decision-Making

Another significant finding to underscore is the role of AI in battlefield decision making and military command systems, which is gradually changing. Today, AI technologies are used in various ways to process huge volumes of intelligence information, predict enemy operations, optimize logistical operations and improve information regarding individual situations in real-time conditions. Satellite images, and signals intelligence and battlefield reports can be analysed within seconds by AI-powered command systems developed in the United States. This figure of 60-70% is based on simulations conducted at the Pentagon that show that intelligence processing time for decision systems that are assisted by AI can be cut in half. Meanwhile, China is fast incorporating AI into the command and control operations, by operationalizing intelligent warfare systems. The studies conducted by PLA have been on “machine-speed warfare” – a system of warfare utilising AI to provide commanders with speedy predicitions during war. These results suggest the potential of AI as a critical tool for the military response and coordination. Nevertheless, as decisions are becoming more autonomous in the domain of AI, there are likely to be fewer opportunities for diplomacy within such crises (Raza and Kausar, 2026).

Cyber Warfare and AI-Driven Security Competition

The study concluded that AI has become an important tool in cyber warfare, and in the digital strategic competition between the U.S. and China. These AI-enabled cyber systems potentially could identify vulnerabilities, automate and spontaneously repel cyber attacks on military networks. The U.S. government has been spending a lot of money to develop AI cybersecurity systems to secure military networks and classified data. Threat detection and predictive cyber defence with advanced AI algorithms now control and enable automated network monitoring. Similarly, China has been also taking steps towards integrating AI to their cyber warfare operations, including their offensive activities and comprehensive cyber surveillance. The immense volume of data into which the Chinese AI surveillance systems can integrate is estimated to be utilized by the Chinese for intelligence gathering as well as for national security purposes. The findings revealed that one aspect of AI that showcased the competitive nature of the two countries is cyber warfare. Faster method with unsupervised attack adds to the strategic threat using AI. There are certain strategic threats, as attacks occur at the speed of operations, without any human intervention, when AI is involved (Luckenbaugh, 2026).

Strategic Stability and Arms Race Dynamics

The results themselves confirm the other major takeaway – that the militarization of AI is an emerging technological arms race race between the United States and China. For both countries, AI superiority is crucial to ensure strategic deterrence and geopolitical influence. The study also suggested that this competition resembles the arms race of the past but has different attributes in the fact that the development of AI technologies is taking place at a drastically different pace

when compared to military systems. The development of AI systems is different from the development of nuclear weapons during the Cold War, where it was possible to change the nature of the weapons only by modifying their architecture.In contrast, for example, to developing nuclear weapons during the Cold War, which required modifying the architecture, AI systems evolves more rapidly with software improvements and machine learning. The findings show that strategic uncertainty exists when the Ai system can operate more quickly than military systems operated by a human being. This brings up a point regarding unintended escalation in particular, in the context of increased geopolitical crises (Glišin, 2025).

Ethical and Legal Challenges

The study identified salient ethical and legal problems of military use cases of AI. Part of the issue is lethal autonomous weapon systems that can choose their victims and have the capability to press the "fire" key without human interference. Fully autonomous weapons could violate the principles of accountability, proportionality and protection of civilians enshrined in international humanitarian law, some human rights groups and AI scientists say. Weaknesses in current international law have yet to be addressed when it comes to effectively regulating AI-driven warfare technologies. The results also highlight issues of algorithmic bias, hacking risks, and unintended civilian damage resulting from AI decision making issues. Technological advances have brought about the ability to create AI systems for use in the military while ethical systems of governance have not (Guo, 2025).

Comparative Strategic Strengths

The findings of the research indicate that there are many strategic strengths that are different between the United States and China. The United States has benefits in: Accelerate the development of advanced AI models. Semiconductor technology Private-sector innovation ecosystems superb military computing equipment (Johnson, 2024).

China has benefits in:

- Rapid deployment capability
- Centralized governance
- Large-scale implementation
- Military-civil fusion integration

The results indicate that China is presently outpacing the US in terms of technological development, but may be able to catch up in terms of implementation in the near future.

Analysis

The conversation brings an understanding of the shift in the nature of military competition between the United States and China, in this case brought about by Artificial Intelligence. AI is not simply an enabling technology, but a strategic asset that will have an impact across the four pillars of deterrence, military modernization, cyber operations, and geopolitical influence. The results are consistent with Technological Determinism Theory, and illustrate how impactful technological invention can be on the development of military doctrines and military behavior. Similarly, Arms Race Theory gives reason for the competition between the two powers to increase due to their constant responses to each other's AI developments. The study also found that AI introduces a paradigm shift in war where the all aspects of warfare are automated, algorithmic, autonomous, and data-driven. At the same time, however, they have great strategic, ethical, and global security concerns. The findings suggest that the trajectory of world politics in the future is likely to depend more on the capabilities and potential of AI and technological innovation and on the possibility of embedding AI systems into military strategy. If without any effective international regulations and transparency measures to go along with the development

of AI, it is likely that the threat of 'AI going military' will be on the rise over the next decade and will jeopardize international security frameworks and geopolitical tensions (Kania, 2021).

Critical Analysis

Strategic Advantages and Military Transformation

A change in defense and U.S.-China strategic rivalry is unfolding, largely due to the impact of AI.AI is transforming the Defence competition between the United States and China and the military world in general. In defense, the applications of AI have led to the improvement in collection and analysis of intelligence, fine-tuning the surveillance system, battlefield coordination, logistics scenario prediction, and autonomous operation. The U.S. has been working on the cutting edge of advanced AI improvements more than any other nation, by working with technology giants such as Microsoft, Nvidia, Google, and OpenAI. These alliances have enabled the Pentagon to develop extremely sophisticated systems of AI-based command and control, autonomy and cyber protection on drones. According to reports those military systems that could make use of AI technology can reduce intelligence processing time by 60-70 percent, improving operational efficiency and quick decision making in military operation. In China, the military question is treated differently as it is characterized as "intelligentized warfare" and "military/civil fusion. This central approach will facilitate speedy transfer of civilians' innovations to military applications. China's investment in swarm technology, which will be based on artificial intelligence, surveillance and self-coordinating battlefields mirrors its attempts to catch the United States in technology. The US has the expertise with high-end AI models, the expertise in the semiconductor industry; while China definitely has the ability to deploy systems at a rapid pace and to deploy systems on a massive scale. It is a new technology race between the two countries, aiming to advance their militaries' use of artificial intelligence to maintain strategic edge (Ibrahim, 2025).

The study puts forth multiple ethical and security concerns that need to be resolved to build and operate military AI systems.The paper identifies a number of key ethical and security issues which must be addressed concerning the development and deployment of military AI. There's just one issue that's they have more and more autonomous weapons systems being developed that need very little human interaction. Some of the problems include algorithmic errors, incorrect identification of potential threats and hitting civilian targets through AI-powered systems. The prospect of war, with a weapon of mass destruction like a nuclear threat from the U.S. and China, is all the more exacerbated by the possibility of a machine-driven war. Second, there is a need for detailed international standards and regulations for military AI technologies. autonomous systems and cyber AI operations and machine speed warfare are not defined in international humanitarian law. In addition, AI can be utilized for cyber warfare, showing how cybersecurity and national security infrastructure are susceptible to attack. The two countries are spending billions of dollars on offensive and defensive cyber AI capabilities to add to the geopolitical tensions. While AI offers military forces greater capabilities and to better deter aggression, it also presents a host of moral dilemmas, cybersecurity risks and potential future threats to peace and security globally (Shahrukh, 2025).

Future Implications

The future has already envisioned the use of Artificial Intelligence (AI) in the military competition between the United States and China that may significantly affect the global security environment, military strategies, and geopolitical dynamics. As AI technologies continue to improve, the use of automated soldiers and AI systems relying on data to make decisions on the battlefield is becoming more popular in the military. The military in the near future will very likely be operating autonomous drones, robots for combat, AI for cyber warfare and predictive

warfare. This move may, indeed, change the character of warfare based on human interaction to machine interaction. The arms race among the worldwide deployment of AI is expected to be one of the key future implications. Both the United States and China could invest billions in yearly military-based AI research for technological domination. There are numerous advances such as advances in quantum computing, self-guided naval systems, hypersonic missile guidance and AI-driven satellite warfare that could continue to inflame competition between the two nations. The worldwide military industry is anticipated to spend hundreds of billions of dollars over the next decade as they all start investing in AI technology for their defense. One of the other important implications is the aspect of strategic stability and deterrence (Radovan VASICEK, 2024).. In the military sector, AI can help improve defense systems by adding more accurate monitoring, predicting potential threats, and providing prompt operational coordination. Military systems can escalate as well during geopolitical crises, and are often very highly automated. Autonomous systems have less time to react than human decision makers will have if they are able to avoid having to send messages or messages to de-escalate. This will further complicate the future of any conflict and hinder the notion of the deterrence between the great powers (Alawamleh and Shammas, 2024).

AI technologies are expected to also play a key part in the future of cyber warfare. Such a capability, dubbed adaptive hacking by the experts, and capable of targeting critical infrastructure, financial systems, military communication networks and national security institutions, could be integrated into cyber systems featuring advanced artificial intelligence capabilities to self-aware vulnerabilities and attack them. With the increasing sophistication of cyber warfare, states might rely more and more on AI powered cybersecurity systems to protect strategic assets from large-scale cyber attacks. One such set of ethics and legal challenges will play a significant role as the future evolves of AI in warfare. If international law doesn't catch up with advances in lethal autonomous weaponry, there could be real humanitarian problems. The issue of accountability, civilian protection, algorithmic bias and human oversight are likely to be central issues in international security debates (Zreik, Iqbal and Yadav, 2026).

Conclusion

In conclusion, Artificial Intelligence (AI) is rapidly changing the landscape of today's military competition; and the United States and China are especially impacted. The results of this research have demonstrated that AI is not simply a useful defense tool but an essential aperture and likely power player that can impact military doctrines, capabilities and, potentially, geopolitical power dynamics. The ability to use AI in an autonomous weapon system, in a surveillance network, in cyber warfare, and in the decision making process of battle is a significant step away from the old warfare paradigm to the new warfare paradigm: algorithmic warfare. Such applications as of autonomous weapons, surveillance devices, cyber warfare and battlefield decision making platforms represent the beginnings of a new era of algorithm warfare. The findings in this research cannot but be one of the biggest and the most notable, so far, that the US and China are engaging in a technological race, or competition, with the race beginning to be run by the force of artificial intelligence (AI). Currently, both countries are heavily investing in their military AI systems, but each has a different strategy. The innovation factor is essential for development – and having the right partnerships with tech giants such as Microsoft, Google, OpenAI, Amazon and Nvidia. In this climate, the U.S. will stay on the cutting edge of creating the most advanced AI systems and supercomputers, as well as defence-related analytics applications. By contrast, China has a more centralised and state-led approach, and its “intelligentized warfare” doctrine is based on integrating AI systems into military equipment at a rapid pace, which is supported by military-civil fusion policies.

The results of this study indicate that AI has contributed to significantly enhance the efficiency of military operations in both countries. For example, there is a possibility to accelerate the processing of intelligence by 60-70%, improve the accuracy of surveillance, and boost the accuracy of predictive battlefield analysis thanks to AI-based systems. The deployment of autonomous drones, expansive robotic systems and man-machine control systems with artificial intelligence is escalating for faster tactical missions and reduced human risk involvement in combat. But all these developments come with their own set of risks, such as algorithmic inaccuracies, cyber security issues, and less human oversight in key decision-making processes. One more important discovery is that the evolution of military AI is reshaping the geopolitical game in the world. The traditional deterrence models were now replaced by the millitary strength as well as nuclear and are now influenced by the capabilities of the AI. AI can make quick decisions, which reduces the time available for human intervention and contribute to mistakes and escalation in military crises. It is a very explosive situation with the possibility for quick escalation of the conflict, due to the automating systems that can occur at the pace of a machine. In addition, the study highlights key ethical and legal issues of military AI. Of special interest of course is International humanitarian law regarding autonomous weapons systems that can detect and strike a target without any human direction.

In the field of global governance, accountability, proportionality and civilian protection issues remain a problem. There is ongoing discussions on an international scale, but from a global point of view, there isn't a global treaty to regulate the development or deployment of lethal autonomous systems. The report also highlights that the U.S. is leading the world in terms of cutting-edge AI innovation, technological sophistication, but China is catching up given its massive investments and quick deployment. The value of the military AI spending in both countries is estimated at between $15–20 billion a year, providing a good sense of the size of this game. The United States has an innovation advantage in the private sector and semiconductor technology, while China has centralized decision-making and has been able to add in systems much quicker, enabling more rapid adoption of AI technologies in military usage. Moreover, this study concentrates on the cyber warfare as a predominant domain of application of AI. AI-driven cyber systems now can spot vulnerabilities, defend networks and even conduct cyber operations in considerably more about it than ever. This increases offensive and defense capabilities and creates a potential for cyber warfare of critical infrastructure and the national security system, which can be used all over the world. The effects of AI in warfare and power relations are undeniable, and the results of this study are consistent with other research that investigates the impact of AI on international relations and power dynamics. The US–China military artificial intelligence rivalry is one of the most threatening issues facing technology and strategy in the 21st century. Un checked and uncoordinated use of this breeding ground of AI at national level or even between nations without transparency may lead to more instability and unwanted war throughout the world.

The results of this study indicate that Artificial Intelligence is a key component in upping the ante in the U.S.–China military competition, as it can markedly improve intelligence processing speed, operational efficiency, and decision making. The U.S. continues to be a trailblazer in cutting-edge military AI technologies, and defense-related AI systems are projected to cost approximately $18–20 billion annually in the U.S. But the Chinese are fast picking up the path of their “intelligentized warfare” and military-civil fusion, a path of incorporating civilian technology into military modernization. There is a growing trend of the use of autonomous drones and swarm technologies by both countries in the fields of surveillance, reconnaissance, and simulated combat operations, indicating the shift towards more automated forms of

warfare. There is also evidence showing that battlefield intelligence processing time can be cut by about 60-70% using AI technologies, enhancing the operational responsiveness and strategic effectiveness of the battlefield.

Recommendations

- Set worldwide rules for self-governing military AI.
- Have humans oversee all lethal AI activities.
- Enhance the cybersecurity safeguards for military AI infrastructure systems.
- Ensure increased transparency of the defense research and development programs
- Expand funding for AI research in military applications that is ethical.
- Create international conventions to halt autonomous weapons proliferation.

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