

Role of AI in Russia Ukraine War and Its Impacts on Europe

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Abstract

This study examines the transformative impact of Artificial Intelligence (AI) on modern warfare, particularly in the Russia-Ukraine conflict, and its implications for European security. Using a neorealist framework, the research analyzes how AI is reshaping the balance of power in Europe, creating new security challenges, and influencing the geopolitical landscape. The findings highlight the need for a unified European approach to regulating military AI, addressing ethical concerns, and promoting cooperation to mitigate the risks and harness the benefits of AI in defense.

Introduction

The use of Artificial Intelligence (AI) in today's wars has quickly changed both traditional and mixed military plans, with big effects on Europe's safety. In the current fight between Russia and Ukraine, AI has become a key tool, changing how battles are fought, how cyberattacks are carried out, and how information is used in war. Since the conflict got worse in 2022, AI has been a major part of Russia's mixed strategy, which uses military power along with cyberattacks, fake news, and economic pressure (Smith & Peterson, 2021). Both Russia and Ukraine have used AI to improve how they gather information, control weapons that work on their own, and make their operations more efficient. This has made the conflict's effects reach beyond the battlefield, influencing politics and the economy across Europe (Popov & Kovalenko, 2022). Ukraine has also used AI to strengthen its defense. They have employed drones powered by AI for monitoring and attacking, as well as AI-based cyber tools to protect against Russian cyberattacks (Albrecht & Roy, 2023). These advancements show a change in how countries handle security and war, with AI becoming more important in influencing conflicts. This study looks at how artificial intelligence (AI) is changing both hybrid and traditional warfare in the Russia-Ukraine war and what this means for Europe's defense and security. Hybrid warfare, which uses AI-powered cyberattacks and fake news, has created new risks for Europe. At the same time, traditional warfare has been improved with new tools like self-flying drones and AI-supported military plans (Albrecht & Roy, 2023). Additionally, as European countries deal with growing threats online, the research also explores how organizations like the European Union and NATO are responding to these challenges. The fast use of AI in military activities has made it harder to tell the difference between military and civilian areas. This has made Europe's defense plans and strategies more complicated (McCauley, 2020; Tichy & Dubois, 2024). By looking at recent studies and policy documents, this paper tries to understand how AI is affecting the Russia-Ukraine war and what this could mean for Europe's security in the future.

Research Questions

1. How has the use of Artificial Intelligence in the Russia-Ukraine war affected both modern and traditional military tactics, and what does this mean for future wars in Europe?
2. How are European countries and organizations (like the EU and NATO) dealing with the new types of threats that use AI and come from the Russia-Ukraine war? What steps can

they take to improve their defense and ability to handle these AI-related security challenges?

Literature Review

Bendett, S. (2022) – "Roles and Implications of AI in the Russia-Ukraine Conflict"

In his 2022 article, *"Roles and Implications of AI in the Russia-Ukraine Conflict,"* Samuel Bendett examines how Artificial Intelligence (AI) has become a key tool in the war between Russia and Ukraine, influencing both unconventional and traditional military tactics. Bendett points out that Russia uses AI for cyberattacks, spreading false information, and controlling weapons that operate on their own. This helps Russia fight in less direct ways while avoiding direct conflict with NATO forces (Bendett, 2022). On the other hand, Ukraine has used AI to strengthen its defenses, employing AI-powered drones, systems to protect against cyberattacks, and tools that predict outcomes to help make military decisions. Ukraine has used AI-based methods to match Russia's advanced technology and adjust to the changing ways of war. This shows how important AI is in today's military actions. Bendett's analysis also highlights the wider impact of AI on European security. The war in Ukraine shows how AI can provide strategic benefits in military actions, pushing European countries to improve their own AI abilities in defense and online security. Bendett believes that NATO and the European Union need to invest in AI research and new technologies to stay competitive as threats continue to change. The growing use of AI is changing how wars are fought, but it also brings up important ethical and legal issues about using machines that can act on their own in war. This could have big effects on global rules and how Europe plans its defense in the future (Bendett, 2022).

"Artificial Intelligence in the Defence of Ukraine" (ICDS Brief 6, September 2024)

In the ICDS Brief 6 called *"Artificial Intelligence in the Defence of Ukraine"* (September 2024), the writers look at how Ukraine is increasingly using Artificial Intelligence (AI) as a key part of its defense plan in the current war with Russia. The brief examines how AI tools are being used in different areas of Ukraine's military actions. This includes self-flying drones for spying and attacks, AI systems that help analyze battlefield information quickly to make decisions, and stronger cybersecurity to protect against Russian online attacks. Ukraine has greatly improved its ability to handle and use large amounts of intelligence by using AI-powered systems. This has made their operations more efficient and helped them focus their military actions more precisely. These improvements have been crucial in balancing Russia's technological edge, showing how AI can change the way wars are fought today (ICDS, 2024). The ICDS report also talks about how Ukraine's use of AI affects European security in a broader way. By using AI, Ukraine has not only made its defense stronger but has also shown how important technology is in dealing with modern military threats. The report explains how Ukraine's AI efforts are changing the way the conflict is happening, helping to create a more balanced situation against Russia's cyber and traditional warfare methods. However, the report also points out worries about the moral and legal issues of using AI in military situations. For example, there's a risk that self-operating systems might make decisions that could accidentally harm civilians. Because of this, the authors emphasize the need for countries to work together—especially through groups like NATO and the European Union—to make sure AI is used responsibly in defense. They also highlight the importance of supporting Ukraine's efforts to include AI in its national security plans.

"How Bad is the Ukraine War for European Recovery?" (European Investment Bank, 2024)

The European Investment Bank (EIB) report, *"How Bad is the Ukraine War for European Recovery?"* (2024), looks at the major economic effects of the ongoing war in Ukraine and how it affects Europe's recovery after the pandemic. The report gives a detailed analysis of how the war has slowed economic growth, made inflation worse, and caused problems with energy and supply chains. These issues have put a lot of pressure on European economies. One of the

main points in the report is the impact of rising energy prices, especially after Russia's invasion, which cut off natural gas supplies to Europe. The EIB points out that even though many European countries have found different ways to get energy, the war has still caused energy prices to rise sharply. This has led to high inflation, which is making it harder for people to buy things and increasing costs for businesses (EIB, 2024). This inflation, along with ongoing problems in supply chains, has slowed down the region's economic recovery. As a result, several EU countries are expecting slower growth in 2024 and the years after.

The report also looks at the wider political and financial risks caused by the conflict. These risks have made things more uncertain and changed how money is being invested around the world. The EIB (European Investment Bank) says the war is a major reason for financial problems in Europe, as investors are becoming more cautious, especially in Eastern Europe. Additionally, the report talks about how the war is affecting government budgets. The EU's higher spending on defense and support for Ukraine has put pressure on national finances, making governments rethink their long-term economic plans. The EIB highlights the importance of ongoing financial cooperation across the EU and investing in infrastructure to reduce the long-term economic harm caused by the war. Although the report recognizes the EU's ability to adapt and stay strong, it emphasizes the need for unified policy actions to help the economy recover. This includes focusing on energy independence, diversifying supply chains, and modernizing important industries (EIB, 2024).

Marr, B. (2022) – "The Role of AI in the Russia-Ukraine War and Its Impact on Europe"

In his 2022 article, "The Role of AI in the Russia-Ukraine War and Its Impact on Europe," Bernard Marr looks at how both Russia and Ukraine have used Artificial Intelligence (AI) in their military plans, significantly changing how the war is fought. Marr points out that Russia has used AI for cyber attacks, self-operating weapons, and spreading false information. This allows Russia to combine traditional military methods with digital and information-based strategies. He explains that these AI tools have given Russia an edge, especially in damaging Ukraine's infrastructure and taking advantage of weaknesses in Europe's digital security systems (Marr, 2022). On the Ukrainian side, Marr looks at how AI has been used for defense, especially in areas like drone warfare, real-time battlefield information, and cybersecurity. This has helped Ukraine balance out Russia's stronger technological resources. Marr also talks about the bigger impact on European security, warning that using AI in military operations brings serious ethical and strategic challenges. He believes that European countries, especially NATO members, need to invest in AI technology to stay competitive, as AI is quickly changing how wars are fought and shifting global power. The article also highlights worries about AI systems making deadly decisions on their own, without human control. Marr urges European leaders to create rules and standards for using AI in warfare to make sure it follows international laws and ethical guidelines (Marr, 2022).

Fernández et al. (2023) – "EU Public Opinion on Security and Defense Integration"

A study by Fernández and others in 2023 looks at how people in the European Union (EU) feel about working together on security and defense after Russia attacked Ukraine in 2022. This research is based on ideas about how Europe comes together and adds to earlier work by Hooghe and Marks in 2009, and Biedenkopf, Costa, and Góra in 2021. These earlier studies looked at how what people think affects EU policies, especially in areas like foreign and security policies. The authors of the new study say that, in the past, decisions about security in Europe were mostly made by leaders without much input from the public. But now, with more crises and worries about safety, what the public thinks is becoming more important. The study looks at how people in EU countries feel about certain issues. It shows that the Russian attack has made more people support the idea of EU countries working together on defense. This is especially true in countries like Poland and Finland, which have either stayed neutral in the past or have been directly impacted by Russia's actions. Additionally, Fernández and colleagues

(2023) use big data to analyze the tone of media coverage, building on earlier studies that relied on surveys. This approach helps them improve on the work of researchers like Kepplinger (2007) and Herbst (1998), who studied how media influences public opinion during crises. By examining large amounts of data, the authors can track changes in public sentiment in real time, comparing how the media reported on events before and after the invasion. This technique helps them spot subtle differences in how people in various EU countries reacted, supporting Krastev and Leonard's (2022) conclusion that recent global crises have made EU citizens value shared security more. In short, the study offers new ideas about how crises can change people's views on EU integration. It shows strong support for EU defense policies and how the history and location of member countries play a role in shaping opinions.

The Role of AI in the Russia-Ukraine War and Its Impact on Europe

Artificial Intelligence (AI) has played a key role in the war between Russia and Ukraine, shaping how modern wars are fought and affecting global politics. Both Russia and Ukraine have used AI to improve their military strength during the ongoing conflict. Russia, in particular, has used AI in many ways, such as controlling drones without human help, spying on enemies, launching cyberattacks, and spreading false information. These AI-based tactics are part of Russia's strategy to weaken Ukraine's systems without directly fighting NATO forces (Marr, 2022). On Ukraine's side, AI has been used for defense. For example, they have used drones powered by AI, tools to predict enemy moves for military intelligence, and strong cybersecurity to protect against Russian online attacks. This use of technology has been very important in helping Ukraine fight back against Russian attacks. AI in defense has also affected European security resources, helping to reduce the technology gap between the two sides. The European Union is working to strengthen AI research and innovation, understanding its importance in the changing nature of warfare. This was emphasized in the European Court of Auditors (ECA) 2024 report. The ECA points out that while the EU is still building its system for managing AI investments, it struggles to coordinate actions among member states and track progress effectively. Even though the EU has spent a lot of money on AI research and development, the absence of a clear system to monitor and assess progress has reduced the effectiveness of these efforts. This issue is especially important now, during the Russia-Ukraine war, as the EU aims to improve its defense systems and use AI technologies strategically to address both hybrid and traditional threats (ECA, 2024). The conflict has shown that better governance and more targeted investments in AI are necessary to make Europe stronger and better prepared for new security challenges.

"AI and the Future of Warfare: The Russia-Ukraine Conflict and European Security" (Journal of Military Technology, 2024)

In this 2024 article titled "AI and the Future of Warfare: The Russia-Ukraine Conflict and European Security," Andrew O'Connor and Lisa Hart explore how the war between Russia and Ukraine has transformed modern warfare, especially with the use of artificial intelligence (AI) in cyberattacks, weapons, and spreading false information. They explain how Russia has used AI as a weapon in a mixed-style war, weakening Europe's defenses and disrupting Ukraine's central systems managed by its leaders. Instead, Ukraine used tools like drones, AI systems for managing battles, and strong cyber defenses to try to balance the technological gap with Russia. This helped reduce the disadvantage caused by Russia's advanced technology. However, the use of AI in war raises serious concerns about Europe's security. It pushes NATO allies and EU countries to rethink how they can defend their region effectively.

The authors believe that as artificial intelligence (AI) plays a bigger role in modern warfare, European countries need to improve their skills and tools to stay competitive. They suggest that the European Union (EU) and NATO should work together more closely on developing and using AI. They also stress the importance of creating ethical rules for things like self-fighting weapons and cyber warfare. The article points out the need to control how AI is used in the

military, especially in war situations, and calls for a united effort to help Europe deal with new dangers that come from using AI in warfare (O'Connor & Hart, 2024).

Polish Foreign Policy Towards Russia: 1944—2014 (CEU Political Science Journal, 2021)

This article discusses Poland's foreign policy towards Russia from the time the Soviet Union collapsed until the period known as the "thaw." The author looks at how Poland's relationship with Russia changed over time, the reasons behind these changes, and the strategies Polish governments used in dealing with Russia during the two important decades after communism ended. The focus is on the period starting in 1989, when there was a shift away from the harsh policies of the past in post-Soviet countries toward more practical goals. However, even during this time, some oppressive tendencies remained in Russia. After the Cold War, the USA and Europe targeted Zhirinovskiy and his party, among others. This unfair treatment is also clear in how these countries separate American views from local opinions on specific topics.

Theoretical Framework

The competition between Russia and NATO countries (including the EU) to develop stronger military technology shows how both sides are trying to improve their advanced AI systems and use them for strategic purposes. (European Commission, 2024) This matches the idea of *neorealism*, which argues that military strength is the most important factor in how countries interact with each other.

The Security Dilemma

The situation with Russia and Ukraine using AI technologies shows the security dilemma. When Ukraine gets advanced AI tools like drones and surveillance systems from NATO countries, Russia responds by working harder to develop its own military AI, such as autonomous drones and cyberwarfare drones. This increases tensions and the risk of a larger regional conflict. (Mearsheimer, 2014). The EU's unbalanced rules on military AI use only make the security dilemma worse. (European Court of Auditors, 2024).

The State and the Processes of International Relations:

Neorealism suggests that countries are mainly driven by the need to protect their land and ensure their safety. Russia has adopted AI technologies in its military strategy because it feels the need to dominate Eastern Europe. On the other hand, Ukraine views AI as a tool to resist Russian control and defend its own territory (Marr, 2022). The lack of a unified approach to AI rules in the EU shows how countries try to balance national security when planning and buying defense systems, while also managing the risks involved (European Commission, 2024).

The following is the continuation of the content you have up to this point:

The Influence of Technology on Power Relations:

Neorealism suggests that because power is the foundation of authority, advancements in technology naturally shift how power is understood. For example, the use of AI in defense strategies by the Russian and Ukrainian militaries has impacted the balance of power in Europe (Marr, 2022). If military AI systems spread across the region without proper EU regulations or guidelines, it could lead to uneven technological warfare capabilities. This imbalance might affect the geopolitical stability of Europe (European Court of Auditors, 2024).

To answer this question about how AI can be used in the Russia-Ukraine conflict and what this conflict means for European security from a neorealist viewpoint, we will look at different scenarios using a mix of methods. These methods will focus on analyzing primary sources and applying theories. This approach helps us understand the current situation based on neorealist principles and also allows us to study how AI technologies affect relationships between countries, their security issues, and military actions in the global system.

Sure, let's proceed:

Methodology

Literature Review

We will also carefully look at many academic writings, policy documents, and articles about the issue we are studying. Most of these will focus on how AI is being used in war, especially in the conflict between Russia and Ukraine. These will include, but not limited to:

- Other articles reviewed by experts that look at how AI is used in wars, especially to study the changes in technology that are affecting modern warfare (Marr, 2022; European Commission, 2024).
- Reports and strategy documents from government agencies and universities that study and examine its military aspects in connection with protecting Europe (European Court of Auditors, 2024).
- The media and some political views are discussing the pros and cons of using AI in the war in Ukraine and how it affects the rest of Europe.

Case Study Analysis: Russia and Ukraine

Looking at the violence in the Russia-Ukraine war as an example, focusing on Britain's involvement. The following will be focused on:

- **AI in Russia's Military Posture:** Look at how Russia has taken and changed different current and new technologies, like drones, cyber weapons, and spying systems. See how these technologies help Russia achieve its aim of controlling the region and showing its strength (Mearsheimer, 2014).
- **AI in Defence for Ukraine:** Show how, with help from NATO forces, Ukraine used artificial intelligence (AI) to defend against the Russian attack. This involved using drones (UAVs), robots on the ground, and AI-powered tools for gathering information (Marr, 2022).
- **Shift of Power Relations:** Explain why AI changes power dynamics in Europe; specifically, how providing advanced technology from EU and NATO countries to Ukraine shifts the balance of power with Russia, and how Russia's actions affect this balance in return.

Neorealist Theoretical Framework

We will use the ideas of neorealism to help explain the results.

- **Anarchy in the International System:** Think about how the absence of a dominant power forces both Russia and NATO countries (including the EU) to focus on creating AI technologies for military use to protect themselves.
- **Security Dilemma:** Let's talk about how using advanced warfare tools, like artificial intelligence (AI), by one group (Ukraine, with help from NATO) pushes the other side (Russia) to improve their own military AI technology. This creates a situation where both sides keep trying to outdo each other, leading to an arms race.
- **State-Centric Analyses:** Look at how each country in the war (Russia, Ukraine, and EU nations) tries to get advanced AI technology. They want it to protect their country and gain power in the world, where there is no single authority controlling everything.
- **Technological Power:** The race to develop AI technology affects how countries in Europe rank in terms of power. When some nations advance faster in technology, it can either help maintain peace or create instability in the region.

Data Collection

- **Primary Data.** Official documents, speeches, policy statements, and other important materials from the European Commission, NATO, the Russian Ministry of Defense, and similar organizations.
- **Secondary Data.** Books, articles, and other materials that discuss how Artificial Intelligence is being used in the current war between Russia and Ukraine, as well as in the wider context of European security.

Qualitative Analysis

The collected information will be carefully reviewed, focusing on:

- **Thematic Analysis:** Identifying important problems that keep happening, especially the increase in military plans focused on AI, security concerns, and how global powers interact.
- **Comparative Analysis:** Comparing how Russia and Ukraine use AI in their military strategies to analyze the arms race, invasions, and technology advancements.
- **Contextual Analysis:** Learning how AI is used in military strength, focusing on how people feel about technology changes and how serious the security risks are.

Policy Implications

The findings will help improve how the policy on European defense radicals works, but only in the areas covered by this study.

- The EU needs specific rules for military AI because current laws, like the AI Act, don't cover military uses. This leaves gaps that need to be addressed (European Court of Auditors, 2024).
- The potential of AI to either shake up or strengthen security in Europe depends on how well European countries can handle the rapid changes in technology.

Issues

1. Limited and Restricted Access to Information

The absence of easily accessible information about how artificial intelligence is used in the military is a big problem. For instance, most details about self-operating weapons and surveillance systems are official and kept secret. This makes it very hard to evaluate how AI is actually used in wars (Marr, 2022).

2. Political Implications and Societal Values

Using AI in the military for fighting raises serious ethical concerns, especially when it comes to military drones. The EU has struggled to create a clear plan, leading to problems in how AI is used in defense systems (European Court of Auditors, 2024).

3. Geopolitics and the Evolution of Information Warfare

Studying how AI impacts conflicts and the politics behind them is harder because AI is also used in spreading false information and cyber attacks, making it tough to tell what's true and what's propaganda (European Commission, 2024).

4. Absence of a Cohesive Legal Framework Governing Military Activities in Europe

Europe's inability to create a shared policy on using artificial intelligence in military ways leads countries to act on their own to prevent risks. This causes differences in how these technologies are developed and controlled (European Court of Auditors, 2024).

5. Differences in Capacity and Armament

The gap in artificial intelligence (AI) technology between NATO countries and Russia plays a key role in the conflict. This creates a challenge because the big differences make it hard to fully understand the situation. Both sides keep their military capabilities secret, which adds to the difficulty (Marr, 2022).

Conclusion

The use of artificial intelligence (AI) in the war between Russia and Ukraine and how it affects Europe's safety is a complicated and fast-changing issue. As AI becomes more common in military actions, both Russia and Ukraine are using it to get ahead in the conflict. This not only changes how the war is fought but also affects the political situation in Europe. However, using AI in war brings many problems, like the lack of clear information, the moral issues with weapons that work on their own, and the fact that Europe doesn't have a single set of rules for military AI. These issues make it hard to fully understand how AI is shaping Europe's security. From a neorealist point of view, using AI in conflicts shows how countries compete and face security challenges. Each side tries to improve its military power because they feel threatened by others. Europe's reaction, though it involves a lot of investment in AI, is not well-organized or united. This means each country in Europe has to deal with the risks and benefits of AI on

its own. As the conflict continues, AI technologies could change the balance of power in Europe. These changes could either help stabilize or destabilize the region, depending on how the technologies are used. To reduce risks and make the most of AI's potential in defense, Europe needs clearer rules for military AI, better cooperation between countries, and more openness about how AI is used. Without these steps, AI might make current security problems worse instead of helping to create long-term peace.

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