P-ISSN: 2790-6795	Annals of Human and Social Sciences	Apr-June 2024,Vol. 5, No. 2 (S)
O-ISSN:2790-6809	http://doi.org/10.35484/ahss.2024(5-II-S)42	[446-459]

Annals of Human and Social Sciences
www.ahss.org.pk

RESEARCH PAPER

Artificial Intelligence and National Security: Future Warfare Implicatior for Pakistan

[1]Dr. Armaghan Farid* and [2]Dr. Ghulam Sarwar

1. Visiting Faculty, Department of Political Science, University of the Punjab, Lahore, Punjab, Pakistan
2. SSE, School Education Department, Government of the Punjab, Pakistan

Corresponding Author armaghannfaridd@gmail.com

ABSTRACT

This paper is an attempt to analyze the existing capabilities of AI technology within Pakistan's national security. Artificial Intelligence is the fourth industrial revolution that is offering opportunities from military to economic. The ongoing competition between Russia, China, and the USA is surprisingly attracting the attention of developing states and many view it as it will somehow disrupt the balance of power in international politics. Therefore, this paper is an attempt to understand AI integration in the military as a strategy for national security and its impacts on the balance of power among states. This is a qualitative content analysis research study uses the approach of exploratory research as well as implements the securitization theory and RSCT model in the theoretical framework. This paper identifies that AI use in Arms race and future warfare can effectively ensure national security and bring substantial consequences for military applications transforming the battlefield, altering the nature and character of war.

Keywords: Artificial Intelligence, India, National Security, Pakistan, Balance of power, Securitization

Introduction

Emerging technologies are shaping the balance of power through military and economic means in the 21st century. Technologies are directly influencing the defensive abilities of countries to fight and win wars. They can explicitly affect the balance of power by impacting the country's economic power. After all, a country cannot sustain its military and security measures in the long term without a solid economic base. Therefore, presently, states like the USA, China, Russia, and India are competing to achieve strategic advantage through Artificial Intelligence (AI) by adopting new technological measures for security purposes (Mandel, 2021). States like USA and China are spending billions of dollars to stimulate their security through AI, on the other hand, the European Union formulated national security plans based on AI strategies (Buchanan, 2021).

AI is revolutionizing the security dilemma of the states because developed countries are eager to adopt and transform their security plans, strategies, investments as well as statements according to the growing competition, this also increases the competitive pressure. It is difficult to define the means and ends of that competition because technology is shifting meaningful change in power politics and power balances between states and this revolution in security and defense measures is raising appalling concerns for developing countries. They view it as a threat to their security and national defense. Therefore, this research is an attempt to analyze the impacts of AI on state relations regarding their security concerns as well as toward what end, with what strategy and tools, and over what national interests are great powers competing in AI? What it reveals and conceals for developing countries' security infrastructures, more notedly traditional rivals -India- Pakistan- relations impacting the South Asian region? This article also analyzes the new ways of security created by AI and how Pakistan adopts or transforms its security strategies to maintain the regional power balance.

Literature Review

James Vincent mentioned that Russian President Vladimir Putin said that AI brings colossal opportunities not only for Russia but for all mankind, also threats that are difficult to predict. Putin said that AI will revolutionize international politics because whoever becomes the leader in this sphere will become the ruler of the world. Presently, AI has increasingly become a national security concern because AI is helping in warfare by developing cyber weapons, controlling drones, quadcopters surveillance, and attacking opponents (Verge, 2017).

Jacob Parakilas and Hannah Bryce divide AI into three categories that fit into international politics and policymaking instrumentally. According to them, AI can play an analytical role in international politics where it will analyze, assess, and recognize the pattern of decision-making. Secondly, they argue that AI will explicitly play predictive roles by offering opportunities for policymakers to understand possible future events. AI can predict election results, the events of geopolitics, economic performances, and other political events. Third, AI will perform operational roles by empowering a nation with autonomous power and driving security measures. A country with an autonomous system is more capable than one without (Bryce, 2018).

Cummings elaborates that AI is going to be part of militaries around the world. China, Russia, and the USA are working to transform their security measures such as warfare, weapons, and nuclear missiles from automatic to autonomous models. The international security landscape is diverting in disruptive ways. Shortly, states with an abundance of economic and intellectual resources will introduce autonomous weapons and machinery of warfare as their power of security. But this will also create a feeling of insecurity for small developing countries lacking economic and intellectual resources and they perceive AI use in warfare as a disturbance in the balance of power (Cummings, 2018).

Heather expands this debate from warfare to human security, political, social, economic, and living standards and argues that the advancing AI proliferation and production will place stresses on the world economy and create a new shift in political and economic power. Further, he believes that to prevent human insecurity, AI holds much promise to enable the governments, international community, and economic stability. AI promises advancement in every sphere and may prove beneficial in securing basic needs and mitigating poverty, violence, and predicting peace in the world (Heather, 2018). Kenneth Cukier believes that economically AI will bring a boom in productivity. AI will positively create new ways of production; trends have been changing and people are diverting from traditional practices to advance strategies of economic stability. AI will have a greater impact on international trade and development. Moreover, he also mentioned that some believe that AI is a threat to jobs and wages, and this fear is legitimate. He mentioned that in the UK in the past 15 years, AI created four times as many new jobs as compared to the past, Oxford, and OECD predictions went wrong because AI improves the job sector, uplifts industrial wages, and increases production (Cukier, 2018).

Michael explains AI by implementing the adoption capacity theory and argues that the adoption of AI will impact the balance of power because economic and organizational requirements for military innovation influence the disruption. He further explains that to answer the impact of AI on the balance of power, the adoption capacity theory suggests that AI will change the character of warfare. During WW1, machine guns influenced those who had fewer technological weapons, and gave privileges to the holder, the same with AI, it influenced the lethality of the battles as well as military tactics and characters which caused the shift in the balance of power and impacted the international politics. Russia is investing heavily, in designing autonomous vehicles, ballistic missiles, and submarines as well as remotely piloted tanks for security and defense. China believes that AI suggests a major strategic opportunity and proposes a coordinated strategy (Horowitz, 2018).

Simultaneously, AI discussion also indicates that interdisciplinary research should be conducted to identify AI's pros and cons in the international arena as a contingency plan to comprehend the threat.

AI has profound potential to affect the balance of power in both the global economy and in military competition. Stable economies rely on applications for military advancement and national security to maintain the balance of power. US, Russia, and China established their national security centers for military AI, as China is far ahead of both and leading the way in AI (Defenseone, 2018). Therefore, China, Russia, the USA, and France are investing a large amount in AI as well as the UK agreed to work with France, China is collaborating with India and Canada, Germany is investing with China, and Israel is fully diverted and focusing to transform its National security on AI. US-Israel collaboration on joint military activities such as autonomous drones has given new importance to defense plans. Japan, Saudi Arabia, UAE, and India are also seeking to boost their defense capabilities through closer bilateral cooperation in AI. In 2018, India allotted $477 million for its Digital India program. This includes machine learning, 3D printing, and promoting technological skills by providing them opportunities as well as the military sector in which India is planning to develop autonomous weapons for national security (Hunter, 2018).

In the 2023 budget, the Pakistani government announced its plans regarding AI by launching various technological programs and introducing new programs in universities. This plan includes training one million people for the speedy adoption of AI. This ten years plan focuses on the improvements in development, industrial, warfare, and surveillance sectors (Geo, 2023).

Another view perceives it as a critical juncture and relates AI with misinformation as a conflict that is on the verge of bringing cyber wars to imperil national security. Traditional wars and weapons are now replaced with state and non-state actors. These actors with the help of cyberspace are trying to manipulate the information and propagate their agenda that might disturb the national security. These AI transitional waves not only amplify disastrous action but also coordinate action against the government and law enforcement (Al-Squri, 2023). The critical school argues that the adversaries using machines create systems to manipulate the citizen's beliefs and thoughts in an undetectable way. This school also views AI as a weapon of mass destruction because it will create mass influence to use as leverage during future wars. Therefore, AI-enabled warfare will not hinge on a single new weapon, technology, or operational concept, rather it will center on the application and integration of AI-enabled technologies into every facet of warfighting (Schmidt, 2021).

Material and Methods

This is a qualitative interpretative research study that uses the methodology of content analysis. It uses the approaches of exploratory and descriptive research to better explain the facts. Securitization theory and RSCT are used as the theoretical framework to understand security in its true sense contrary to the traditional definitions and according to the present time. Factual data, discourses, reports, books, speeches, newspapers, and research articles are data sources. In the end, it critically analyzes Pak-India competition in the AI field as a case study to predict the future of the South Asian Region.

Theoretical Framework

This section discusses the basics of AI, its tools as well as Securitization Theory of IR. This securitization theory further implements the framework of Regional Security Complex Theory (RSCT). First, what is National security? It is a strategy to ensure national interests and protect the fundamental rights of citizens/states. According to Berkowitz and Bock, National Security is the ability of a nation to protect its interests from external threats

(Bock & Morton,1966). McNamara extends the debate by relating it to military hardware by defining it as a military phenomenon (McNamara, 1969). Cohen makes it simple and defines it as protection from internal and external threats. It is necessary to preserve and acquire rights (Cohen, 1972). Presently, security can be defined as the minimization of threats and danger, protection of rights, and strategy of preservation. It is the ability to retain and enhance the role, achieving maximum national interests.

Artificial Intelligence is the study of computations that make it possible to perceive, reason, and act (Copeland, 1993). According to Kurzweil, it is the art of creating machines that perform functions that require intelligence when performed by people (Dobrev, 2012). AI offers giant possibilities to optimize the war against crimes and strengthen national security. Prof. Radulov explains features and capabilities of AI such as AI changes over time and assists in rapid decision making. AI, s technologies such as robots, and autonomous devices work better and fast than humans. States can and are using AI, s techniques for enhancing national security, it offers a lot from a security perspective. With the help of AI, states can detect crimes and criminal activities (Radulov, 2019).

Theoretically, AI has four components. Offensive nature assists unauthorized permission to opponent security systems. The defensive nature offers to detect and prevent any unauthorized activity in the security system as well as protect security from internal and external threats. Adversarial learning examines cybersecurity threats and crimes. It seeks to spread misinformation and propagation agendas. Overarching questions AI will prove beneficial for mankind or a new threat? To answer this question, this paper argues that every technology at the beginning received criticism but, in the end, if someone used it for peace, safety, security, and prosperity it will be highlighted as intellectual development.

Securitization theory and RSCT framework

Now, how can someone understand securitization theory in IR? According to Clara, Securitization is a state-national policy, designated by politicians and decision-makers, threatening issues that disturb the peace will be dealt with immediately (Eroukhmanoff, 2017). Securitization theory challenges the traditional approaches to security in IR and expands its areas of concern, including newly emerging issues such as environmental, economic, extremism, and technological issues. This neo-security theme is further elaborated by Barry Buzan and Ole Waever as regional security complex theory (RSCT). According to the RSCT, concepts of security broaden the subject, Buzan offered a comprehensive new framework that questions the idea of the primacy of the military element and the state's understanding of security. Buzan and other authors offered a different security paradigm and compared the costs and benefits of the security issues (Buzan & Waevar, 1998). However, the authors widen the concept of security threats (Baldwin, 1997). Buzan finds the common ground between traditionalists and wideners through their methods. He wanted to build a more radical view of security studies by exploring threats to referent objects and the securitization of those threats (Buzan, 1996). This concept basis argument was that "the security is not given but is instead constructed and it is about survival.

The fundamental principle of the Realism theory of IR is the attainment of security. Waltz explains it as a "balance of threat" (Waltz, 2000), Mearsheimer views it as a defensive arrangement (Mearsheimer, 2007), and Morgenthau argues that politics is a power struggle that rests on interests (Morgenthau, 2014). So, realistic theorists believe that maximizing national security is the main goal of any state and is necessary for its survival.

This RSCT framework offers considerable insights by focusing on regions, arguing that they are as important as states and global actors, and doing so from a security perspective. By viewing Artificial Intelligence through the lens of RSCT, it will become clear that security is not only about strengthening and enhancing military forces and arsenals but

in the recent era, it has been linked with economic stability and raising human living standards by providing them the greatest good in form of jobs, education, health, and political stability. RSCT offers states to think out of the box and with this non-traditional thinking, states can adopt new technologies to counter the threats and tensions among them. Therefore, this paper seeks to bring attention to the newly emerging agendas of security and emphasizes that states like China, Russia, and the USA need to assist mankind by offering other resources such as economic and intellectual. RSCT focuses on regional ties, integration, and cooperation which leads to peace. According to the RSCT framework, when states share their resources, then there is no need to be afraid of AI and other technologies because the peaceful environment will not leave any threatening space between them. Buzan divides global politics into three stages: human security, national security, and international security (Buzan, 1983).

Now the coming section discusses AI integration into security systems for national defense. Its impacts and vulnerabilities in defense as well as protecting states from threats. How do most analysts understand it whether it is a blessing or threat?

Artificial Intelligence and National Security

Many independent studies' results predict that the use of AI in defense systems has become inevitable. Evidence-based empirical data highlights that AI deliberately offers numerous opportunities for national security systems to improve the vulnerability and effectiveness of existing processes. Its usage will improve data privacy as well as increase awareness about sensitive issues that can disturb the security system. Policymakers explain various ways of AI integration such as AI will transform the organizational processes from manual to automated administration which could offer efficiency and assist data management quickly. From the point of cybersecurity, they believe that it could be intimate proactively if someone tries to manipulate or unauthorized access (Babuta, 2020). It will easily alarm the authorities about cybersecurity threats and attacks. Through AI, organizations can develop intelligence analysis based on rational arguments to improve and solve problems. It will also analyze the individual behavior insights and identify any immoral unethical action.

In a nutshell, when AI integrates into a security system it will

- Detect any digital security threat such as malicious software
- Threats to political security will also be detected like deep fake, election rigging, disinformation
- Physical security like autonomous vehicles, tanks, and drones can also improve the defense system

These above-mentioned threats digital, political, and physical can also harm any other nation's security system. The opponent for states will use AI technology for damage. Those nations who will use AI technology to rule over other states will deliberately disturb the balance of power and create disturbance within the region.

Artificial Intelligence and Arms Race: USA, China, Russia, and EU

The USA spent a large budget on defense greater than China, Russia, and the EU combined budget. The USA launched the National Security Commission on AI in 2018 for AI, s integration. This commission is following the American “Third offset strategy” to integrate AI into military weapons. China the biggest rival of the USA is leading the way to other nations in AI technologies and also spending large, is working on a “Next generation artificial intelligence development plan” with the aim of stability and survival. China has a better and fast capacity for weapon development and publicly making its way to becoming the world's

leader. Russia is leading in lethal autonomous weapon systems (AWS) following the policies "creation of prospective military robotics through 2025" and "concept for deployment of a robotic system for military use until 2030". EU member states have mixed feelings about AI integration. Some see it with positive intent and are seeking to develop AI-based defense systems. The UK, France, Germany, Italy, and Sweden are all developing AWS. Combined EU states initiative has developed a large number of arsenals, autonomous vehicles, and military equipment surpassing the USA (Haner, 2019).

Table 1
Comparison of Arms Race

State	Intent to develop AWS	Defense spending 2017-2021 billion (approx.)	Several AI companies (approx.)	Nuclear Warheads
USA	High	732	400000	5550
Russia	High	61	20000	6255
China	High	252	350000	350
EU	High	281	Unlimited	Unlimited
India	High	72.9	150	160
Pakistan	High	10.3	20	165

(Singer, 2018; Khan, 2020; Tass,2019)

The arms race between states has revolutionized the world. Presently, artificial intelligence is the most powerful weapon for defense. Russia and China both are far ahead of the USA because the USA lacks resources such as intellectual and technological and is trying to get help from technology companies. In sum, every state is eagerly trying to meet prospects by adopting technological agendas and infrastructures. Now, the coming section discusses the working of LAWS.

Lethal Autonomous Weapon Systems (LAWS)

LAWS are different from traditional weapons and use sensor suites and computer algorithms to target. LAWS independently identifies a target, loads the onboard weapon, and destroys the target within one attack, surprisingly, without human assistance and control. However, these types of weapons are not fully developed at large scale. Many states are working to enable AI for military operations, communication, and targeting threats. The USA Department of Defense (DOD) released its statement in which it outlined the construction of AWS at a large scale. DoD is predicting and hoping that at the end of 2025, the USA will become fully updated by having autonomous weapons and military infrastructure. The USA is having two competitors, Russia and China, therefore, eagerly want to implement maximum as a counter-reaction. Russia's President as mentioned above, said that those who rule the AI will lead the world, investing heavily to achieving the AWS is continuously becoming a national security threat to the USA. China is leading both Russia and the USA in AI development. China is working on its 2017 plan "Next Generation AI Development" as a strategy technology. This policy has become a focus of international competition because China seeks to develop core AI technology industry worth billions $ by 2030 as well as lead the world in AI. This competition has become an alarming situation for the USA by understating the grave impacts on national security.

China in all ways is dominating the AI industry. Open-source publications are also indicating that the Chinese are also developing a suite of AI tools for cyber operations. The USA is worried because China has already developed weapons with the help of AI. The USA also left behind in defense innovation and feared a widening "generational gap" in comparison to Russia and China. Economically stable China is now considering taking over the USA commercial market by creating and selling the latest devices for daily usage.

Moreover, China is recruiting many American AI engineers and researchers to surpass the USA in research and innovation.

Rsults and Discussion

AI Impacts: Opportunities and Challenges

Whenever a new technology is introduced, it brings advantages and disadvantages. Similarly, AI has revolutionized the world by opening a thousand doors of innovation, giving new dimensions to thoughts. While the world is succeeding in new experiences, it has brought opportunities as well as challenges. This section first discusses what AI is offering the world. The other section discusses the challenges AI is creating and facing. Opportunities are:

Autonomy

As discussed above, with the help of AI, the industrial sector is going to be autonomous with the help of machine languages, algorithms, and programs. From a security point of view, experts believe that military institutions gain significant benefits from autonomous systems because missiles, vehicles, tanks, drones, and weapons will work automatically without human assistance through machine language by replacing humans. Chemical and bioweapons can also be controlled by it. Therefore, AI is created as a tactical and strategic necessity as well as a moral obligation to develop autonomous systems.

Threat Assessment

With the help of AI, security institutions can easily asses any threat, attack, and security risk in their security system. The institutions dealing with cybersecurity can easily detect any unauthorized permission in their system as well as it will prevent loss. It will also analyze the nature and impact of the threat and minimize the risk proactively. From the military perspective, states can ensure their confidentiality and safety.

Economic Superiority

Everything has become digitalized and the demand for digital goods has been growing very fast. Digital devices like cell phones, laptops, vehicles, and weapons are very common. Therefore, industries and manufacturing companies are developing at high speed and increasing their sell day by day by advancing their features. This production and selling contribute almost 70% of the state's economy. These generate high revenues and make a nation stable. This economic boost and stability are leading them to enhance their security system. For example, digital companies like Apple, Microsoft, and Dell are contributing a huge amount to the US economy.

Predictability

AI tools assist humans in predicting an event. It can detect and predict any disastrous future event. With the advancement in AI, its tools are helping states to predict any pandemic, earth quick, or natural harmful event so that with countermeasures, humans can prevent them or prepare them for what will come.

These opportunities are also facing some swear challenges such as

Harmful use of technology

Some view this that will prove harmful because this is not certain that it will always be used for human betterment or development. Their argument is based on facts and they

argue that any terrorist organization can use AI for harmful activity. If any state attacks another and uses it then the results will be very unpredictable and grim. Another view takes it as a tool for misinformation, deep fakes, and election interference results and will harm individuals and actuate them to do wrong.

Undetected nature of weapons

AI is helping in developing undetected weapons. This kind of technology can be harmful to anybody, especially government officials, military persons, and politicians.

Economic instability and inflation

Economic disparity has been a grave concern for third-world countries. This technology also increases this economic disparity and makes them more colonized and dependent. They are feeling insecure because in every sphere they lack resources. With AI in the hand of developed countries, third-world nations will always remain fearful. These digital devices are also heavily costly increasing inflation and a feeling of insecurity.

Balance of power disruption

As discussed above, countries that have advanced machinery and have shifted their entire security system to this technology can easily disrupt the balance of power between states. All the players involved in this competition are trying to get the upper hand from each other. A country that has a security system based on modern technology will be considered a threat to the security of another country. This will upset the balance of power. In short, more control over the technology will make the security system strong and the country will be in a position to easily conquer and control other countries.

Evolutionary and Revolutionary Impact of AI on Peace and War

AI will have an evolutionary and revolutionary impact on the conduct of warfare and combat. Robert O Work describes AI first, as a potentially disruptive technology that may create sharp discrimination in the conduct of war, second, there are huge chances that AI may produce dramatic improvements in military effectiveness and warfare. With the help of AI, all military weapons and systems will be processed faster and more efficiently. This evolution will bring revolution in the world and advance the security system from narrow thinking to broad approaches (Work, 2014). The critical view argues that there are chances that AI technology will bring complex outcomes in social systems, these complex outcomes may be a menace to humanity and will eventually become more appalling. There must be treaties, laws, and agreements that can determine the proliferation of AI-based military and security systems. These laws and treaties will overhaul the complete project before creation and check its vulnerability, impacts, and outcomes. This revolution may benefit humanity but there are many chances that it will complicate the security system and conduct of combat. Military robotics and automatic weapons may increase huge differences in war and peace. But from a rational point of view, the position holder must assess its compatibilities with military and security systems. AI and its tools have to be used for human well-being and welfare not for the destruction and loss. The AI laws will determine the future of AI integration into warfare and must restrict states to use it only for security not for war (Singer, 2009). This revolution will bring a Semitic shift to the battlefield (Mattis, 2018), alter the immutable nature of war, change the character of war, and fundamentally transform the way war is waged.

South Asia Region and Artificial Intelligence Race: India Vs Pakistan

The adoption of AI is being named as “Fourth Industrial Revolution” (Srivastav, 2018). The opportunities of AI advances call for urgent response. Therefore, India is

collaborating with other countries such as Israel, Australia, the UK, the US, Russia, the EU, and Japan to counter the cybersecurity threat (Farooq, 2022). India's road map of AI entails the following aspects (Vempati, 2016):

- Short Term Actions: Invest in automation research, create regional innovation clusters, and make India a global hub for machine intelligence-based systems.
- Medium Term Actions: Apply AI techniques to minimize the threat, use AI to scan, plan and scrutinize the data, and develop automation machinery.
- Long-Term Plan: with the collaboration of other countries and industries, India is seeking to lead in the field of AI in the South Asian Region. Therefore, working on automatic weapons, making systems to detect cyber threats, and aiming at becoming the fourth state whose security system is based on AI.

India and Israel signed agreements in cooperation to counter the cyber threat and security transformation system based on AI in 2017. Till now, both countries are working and moving forward with new policies and agendas. India and Australia are working bilaterally on cyber and military innovation with the help of AI. With the UK, India signed an agreement to counter security threats by cooperating and sharing each other technology. India and the US agreed on a framework for sharing information, technology, and economic resources to counter the cyber security threat and enhance their capabilities in the cyberspace race. India's goal is to become a ruling and competing power in the South Asian Region and focus on achieving it by various means.

Challenges for Pakistan

Virtual reality has become a new source of economic power. India is far ahead of Pakistan in AI. Presently, India is an emerging industry in AI-based systems. India's AI industry signed an agreement with Apple and Tesla to develop their products worth billions. Pakistan is lagging behind in AI engineering and industry and lacks the policy and vision in this field. India is moving forward by adopting new sources and focusing on becoming economically, socially, and militarily stable than Pakistan. Since this AI rhetoric is circulating in the world, Pakistani decision-makers have done very little. Pakistan did not try to grasp this opportunity proactively but considered it less important. As compared with those who adopted it early, now have become economically stable and they are trying to implement it into security systems. This situation creates various challenges for Pakistan such as:

- Cyber Security threats and unitarization access in the systems of Pakistan can make conditions troublesome.
- Economically unable to compete with other states
- Intellectual challenges because Pakistan does not have any AI-related industry and people are leaving for better opportunities.
- India is the biggest threat presently because if India becomes the AI global hub, then it will attract other countries to invest in India, and its hegemony will not be inevitable.
- AI is enhancing security approaches and strategies. Pakistan still has not announced any security-related policies based on AI. Pakistan lacks autonomous vehicles, tanks, and other machinery which makes it vulnerable and a security threat.
- Pakistan lacks agreements on AI with other countries like India on sharing and cooperating. Pakistan needs to move fast and make agreements with China, Russia, and USA for bilateral cooperation in the field.
- Infrastructure: Limited technological infrastructure and internet connectivity, especially in rural areas, hinder the widespread adoption of AI.

- Skilled Workforce: There is a shortage of AI experts and trained professionals in Pakistan. Efforts to build a skilled workforce through education and training programs are crucial.
- Investment: Insufficient funding for AI research and development restricts innovation and progress in the field.
- Regulatory Framework: The absence of a comprehensive regulatory framework for AI can lead to ethical and security concerns.

Way forward for Pakistan and policy making

Now in 2023, the Pakistani premier announced the National Action Plan and roadmap of AI integration by announcing the creation of a body that will deal with AI-based systems and knowledge. Pakistan aims to train one million people in Artificial Intelligence. Pakistan is aiming to accelerate the adoption of AI by setting up a task force (Arab, 2023). The integration of AI in education systems will bring potential revolution in our governance, and health care, and also advance sectors of security and weaponry (Nation, 2023). There is a dire need to bridge the technological gap between Pakistan and the rest of the world by producing a larger number of skilled technical professionals in AI. Through education, universities and colleges need to highlight the global momentum to aware the people of Pakistan. The important reason behind the supremacy of AI technology is to compete with other states, maintain the balance of power, and minimize India's role in the South Asian Region. RSCT framework emphasizes the transformation of security from traditional views to advanced views and insists nations adopt new trends to maintain the security and balance of power in the region. Pakistan has to move in a hurry as a response to India so that the South Asian Region India will not succeed as a ruling power.

Opportunities

- Human Capital: With a young and growing population, Pakistan has the potential to develop a significant talent pool for AI through targeted education and training initiatives.
- Strategic Partnerships: Collaborations with international organizations, universities, and tech companies can accelerate AI development and implementation.
- Sectoral Applications: Focusing on specific sectors like agriculture, healthcare, and education where AI can have a substantial impact can help drive adoption and innovation.

Conclusion

Artificial Intelligence is the fourth industrial revolution that is transforming the security dilemma and strategies. AI offers numerous opportunities in almost every sector of life. This paper discusses AI from a security perspective and its integration into security systems. The USA, Russia, and China are competing with each other in the race for AI and trying to become a superpower in the AI field. Their vision is creating an alarming situation for other states because this will upset the balance of power in the world. the framework of RSCT also allows nations to adopt and transform their security to new means. AI is an emerging field integrating into security creating a sense of insecurity for those who have not adopted it yet. This paper argues that with advanced knowledge and intellect, every nation needs to develop its security system based on AI technology. So that the fear of insecurity can be mitigated. On the other hand, RSCT argues that nations need to collaborate to maintain peace and avoid war. The means and trends of security have been transformed from war to stable economic, military, and development resources. In a nutshell, Pakistan is lagging in the adoption of AI, which makes it vulnerable to other states especially India which is working hard to achieve the status of AI Hub. To counter this threat, Pakistan needs

to adopt AI on an early basis and try to make agreements with other nations for collaboration and sharing of information. With this, Pakistan strengthens its national security like the USA, Russia, China, and India. The future belongs to AI and virtual reality. It offers economic growth at a rapid speed. Pakistan needs to compete in this race to counter the cyber security, military, war, and LAWS attacks.

Recommendations

This research paper after investigating the literature and sources recommends that if Pakistan is eager to compete with India and other countries, Pakistan must

- enhance cybersecurity measures by developing an advanced AI-driven cybersecurity system and training cybersecurity professionals.
- Develop an Autonomous Defense System by focusing on AI-enabled autonomous weapons.
- Invest in AI-based research and Development Programs
- Divert intentions from traditional ways of thinking to modern ways of thinking by generating jobs, offering resources, and developing AI-based institutions in the country.
- Establish a national-level AI regulatory body to monitor and regulate AI Arms development
- The government must prioritize AI as a top priorit,y allocate adequate funds and explore public-private partnership

References

Artificial intelligence gains foothold in Pakistan. (2023, May 14). *The Nation*.

Al-Suqri, Mohammed Nasser and Gillani, Maryam. (2022). A comparative analysis of information and artificial intelligence toward national security. *IEEE Access, 10*, 64420--64434.

Babuta, A., Oswald, M., & Janjeva, A. (2020). Artificial intelligence and UK national security: policy considerations.

Bock, PG and Berkowitz, Morton. (1966). The emerging field of national security. *World Politics, 19*(1), 122-136.

Parakilas, J., Bryce, H., Cummings, M., Roff, H., & Cukier, K. (2018). Introduction: Artificial intelligence and international politics. *Artificial intelligence and international affairs: Disruption anticipated*, 1-6.

Buchanan, B. (2020). *Artificial Intelligence and National Security.* Center for Security and Emerging Technology.

Buzan, B. (1983). *People, states, and fear: The national security problem in international relations.* Wheatsheaf Books.

Cohen, Ira S and Tuttle, Andrew C. (1972). *National security affairs: A syllabus*. Seton Hall University Press.

Copeland, J. (1993). *Artificial intelligence: A philosophical introduction.* John Wiley \& Sons.

Cummings, Mary L and Roff, Heather M and Cukier, Kenneth and Parakilas, Jacob and Bryce, Hannah. (2018). *Artificial intelligence and international affairs*. Royal Institute of International Affairs

Defenseone.com. (2018, July 11). China, Russia, and the US are all building centers for military AI. *Defenseone.com*.

Dobrev, D. (2012). A definition of artificial intelligence. *arXiv preprint arXiv:1210.1568*. Bulgaria Press.

Eroukhmanoff, C. (2018). Securitisation Theory: An Introduction. *E-International Relations*, *21,* 104-119.

Farooq, A., & Ali, A. (2022). India's growing cyber partnerships and challenges for Pakistan. *Margalla Papers, 26*(2), 49-61.

Geo.tv. (2023, August 11). Pakistan forms body to develop roadmap for speedy adoption of AI. *Geo News*.

Haner, Justin and Garcia, Denise. (2019). The artificial intelligence arms race: trends and world leaders in autonomous weapons development. *Global Policy, 10*(3), 331-337.

Hunter, A. P., Sheppard, L. R., Karlen, R., & Balieiro, L. (2018, November 5). *Artificial intelligence and national security: The importance of the AI ecosystem.* Center for Strategic and International Studies.

Horowitz, M. C. (2018). *Artificial intelligence, international competition, and the balance of power.* Center for a New American Security

Khan, M. (2020). *AI and National Security in Pakistan*. Pakistan Armed Forces.

Mandel, D. R., & Irwin, D. (2021). Uncertainty, intelligence, and national security decisionmaking. *International Journal of Intelligence and CounterIntelligence*, *34*(3), 558-582.

Mattis, J. (2018). *Summary of the 2018 national defense strategy of the United States of America*. Department of Defense, Washington, United States.

McNamara, R. S. (1968). The essence of security. *L. Ng.(Ed.), Alternatives to Violence. A Stimulus to Dialogue, New York (Time-Life Books) 1968, pp. 126-135.*

Pakistan sets up task force for 'accelerated adoption' of AI. (2023, August 12). *Arab News*.

Radulov, N. (2019). ARTIFICIAL INTELLIGENCE AND SECURITY. SECURITY 4.0. *Security \& Future, 3*(1), 3-5.

Roff, H. M. (2018). Advancing Human Security Through Artificial Intelligence. *Chatham House Report*, 19-28.

Schmidt, Eric and Work, Bob and Catz, Safra and Chien, Steve and Darby, Chris and Ford, Kenneth and Griffiths, Jose-Marie and Horvitz, Eric and Jassy, Andrew and Mark, William and others. (2021). National security commission on artificial intelligence (ai). *National Security Commission on Artificial Intellegence, Tech. Rep*.

Singer, P. W. (2009). *Wired for war: The robotics revolution and conflict in the 21st century*. Penguin.

Singer, P. W., & Brooking, E. T. (2018). *LikeWar: The Weaponization of Social Media*. Houghton Mifflin Harcourt.

Sheppard, L. R. (2018). *Artificial Intelligence and National Security: The Importance of the AI ecosystem.* CSIS Defense-Industrial Initiatives Group.

Srivastava, S. K. (2018). Artificial Intelligence: The way forward for India. *JISTEM-Journal of Information Systems and Technology Management, 15*. 1-23.

TASS Russian News Agency. (2019). *Russian Military to Develop AI-Based Autonomous Systems*.

TheVerge.com. (2017, January 1). Putin says the nation that leads in AI 'will be the ruler of the world'. *TheVerge.com*.

Tucker, P. (2018, July 11). *China, Russia, and the US Are All Building Centers for Military AI.* Defenseone.com:

Ullman, R. H. (1983). *Redefining security.* International security.

Vempati, S. S. (2016). *India and the artificial intelligence revolution* (Vol. 1). Washington, DC: Carnegie Endowment for International Peace.

Vincent, J. (2017, Sep 04). Putin says the nation that leads in AI 'will be the ruler of the world'. *TheVerge.com*

Work, R. O., & Brimley, S. (2014). *Preparing for war in the robotic age.* Center for a New American Security, Washington, DC. Tech

Yousuf, N. (2023, April 15). Pakistan forms body to develop roadmap for speedy adoption of AI. *geo.tv.*