

The Role of AI in the national and global security:

Outline:

A- Introduction

B- Overview of Artificial Intelligence in the modern world.

C- Role of AI in the national security:

a- AI enhances the cybersecurity which is the backbone of national security and defense.

U.S. department of Defense AI Strategy (2019) emphasizes the centrality of AI in improving military capabilities and cybersecurity.

b- AI plays a crucial role in data gathering and intelligence gathering and analysis to improve national security. During Gaza-Israel war and Russia-Ukraine war, AI plays crucial role in data

gathering and analysis.

ii- According to US defense minister AI is very important in modern warfare for decision making and maintaining the country's national security advantage.

c- Countries use AI's predictive analytics and threat assessment for enhancing national security;

i- The U.S. Homeland Security's AI predictive Policing Programs use algorithms to predict where and when crimes or terrorist attacks are most likely to occur.

ii- A 2022 Brookings institution report found that 60% of defense organizations worldwide are developing predictive AI tools to enhance national security.

d- AI can enhance decision making by providing real-time data analysis in crisis situation and improve national security;

The OODA Loop (Observe, Orient, Decide, Act) model has been enhanced by AI systems, allowing for quicker decision making in military engagement and cybersecurity incidents.

e- AI technologies are integrated in Airspace and Maritime to protect national border;

i- The European Maritime Safety Agency (EMSA) uses AI-driven satellite monitoring systems

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European waters, identifying illegal fishing operations and human trafficking routes.

ii- The Russian S-400 Air Defense System incorporates AI to detect and intercept enemy aircraft and missiles, improving its ability to protect against aerial threats.

AI is also used to counter misinformation and propaganda warfare to protect national security.

D- Role of AI in global

Security: weapons have transformed

a- AI autonomous weapon change the warfare dynamics and use of global security.

i- "Army of None: Autonomous weapons and the future of war, Paul Schreier discusses how AI weapons could change the warfare dynamics, potentially reducing human casualties but also raising ethical concerns."

initiating an attack could spark unintended wars, as decision

b- In a global security, AI plays a role in diplomatic negotiation and conflict resolution;

i- Henry Kissinger in collaboration with Eric Schmidt and Daniel

Hattenlocher in 'The Age of

AI: And Our Human Future,

discusses how AI can aid

in diplomatic strategies by

modeling potential outcomes

and aiding decision-makers

of AI with unprecedented precision.

c- AI is used to counter global

environmental challenges and

global warming to enhance global security;

i- AI driven climate models

used by the Intergovernmental

Panel on Climate Change (IPCC)

predict the impact of global

warming on water resources

and food security, helping

governments develop sustainable

policies.

d- AI plays a role in global

security by nuclear

activity monitoring and protecting

critical infrastructures;

ii- The IAEA uses AI-driven

systems to monitor nuclear

activities in countries like

North Korea and Iran and

"nuclear winter"

other countries to detect any potential violations of non-proliferation agreements and international law.

e- AI is used to gather information about human right violations and violation of international laws to ~~pro~~ take actions to protect global ~~to~~ ~~system~~

i- During Gaza-Israel war, violation of war law

ii- Human right violation in Kashmir, Yemen, Sudan, China and Afghanistan.

f- AI is used in Global Health security

The development of COVID-19 vaccines was significantly expedited by AI-driven models, such as DeepMind's Alpha Fold, which predicted protein structures vital for vaccine efficacy.

E- Challenge of AI to the national and global security:

a- AI Autonomous Weapon System and its ~~lethal effects~~; and its legal effects

The autonomous weapon of AI misidentifies a threat and initiating an attack could spark unintended wars, as decision

was is left in the hands of machines rather than human commanders.

b- AI also ~~exacerbates the~~ threats of cyber security

A 2023 World Economic Forum report predicted that by 2030, AI would be responsible for automating 50% of all cyberattacks, making it harder for traditional cyber security measures to keep pace.

c- Data Breaching and Unauthorized access to confidential information threaten the national and global security.

A 2022 IBM report revealed that the average cost of a data breach involving AI was 15% higher than traditional breaches due to ~~complexity of the AI systems involved and the value of the data being targeted.~~

d- Overreliance on AI and erosion of human expertise is also a threat to national and global security.

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F- Way Forward to addressing the Challenges of AI to National and Global Security:

- a- World ~~sho~~ power and International AI regulatory body should ~~ex~~ establish Global AI Governance and regulatory frameworks.
- b- AI bodies should develop ethical AI standards.

- c- To reduce the AI threats in security must incorporate human oversight and Hybrid model to keep human involved in AI technology.

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G- Conclusion:

well organized and quite relevant