

AI and the Future of Warfare

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AI and the Future of Warfare: India's Strategic Challenge

Context

With the emergence of **Artificial Intelligence (AI)** as a transformative force in global security, warfare is no longer limited to physical combat. Countries like **China** are swiftly integrating AI into their defence systems, reshaping modern military strategies. This shift poses **strategic and technological challenges** for India, especially in terms of **AI deployment, energy security, and multi-domain military preparedness**.

AI's Role in Modern Warfare

- AI is redefining warfare by enabling:
 - **Autonomous weapon systems**
 - **Real-time data-driven decision-making**
 - **Advanced cyber and electromagnetic warfare**
 - The effectiveness of AI systems depends on:
 - **Large-scale data processing**
 - **High computing power**
 - **Reliable and uninterrupted energy supply**
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China's Lead in Military AI Deployment

- Even before its **DeepSeek AI model**, China's **People's Liberation Army (PLA)** began integrating AI under the concept of "**intelligentised warfare**."
 - Key developments:
 - AI-enhanced artillery systems now fire faster and more accurately.
 - **Generative AI** is integrated into drones to autonomously locate and strike enemy radar.
 - DeepSeek is expected to further expand PLA's AI capabilities across all military branches.
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China-Pakistan Military AI Collaboration: A Strategic Concern

- China is actively supporting **Pakistan's Centre of Artificial Intelligence and Computing (CAIC)**, set up in **2020**.
 - Experts note:
 - Focus areas include **cognitive electronic warfare** and **AI-based decision-making**.
 - During **Operation Sindoor**, Pakistan possibly used:
 - AI-powered systems for **real-time targeting**
 - **Chinese satellite data** and analytics for **vector tracking**
 - This collaboration amplifies the **strategic threat** for India.
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C4ISR and the Need for Civil-Military Fusion in India

- China is advancing rapidly in **multi-domain operations**, combining:

- **Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR)**
 - Virtual domains like **cyberspace**, **space**, and **electromagnetic spectrum**
 - India must:
 - Strengthen **civil-military tech integration**
 - Enhance **indigenous capabilities** in AI and cybersecurity
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Energy: The Hidden Backbone of AI-Driven Warfare

- AI applications require:
 - Continuous and **high-capacity power supply**
 - Energy to run data centres handling military operations across **land, air, sea, space, and cyberspace**
 - Technologies like **machine learning, big data, and NLP** depend on:
 - **Stable and scalable electricity**
 - **Nuclear energy** is seen as a reliable solution to power these critical systems.
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India's Nuclear Energy Shortfall: A Strategic Limitation

- India's nuclear power capacity is just **7.5 GW**, only **one-third** of **South Korea's**.
- Key concerns:
 - Insufficient to support future **AI-powered defence systems**
 - Overdependence on **renewables** without effective storage

- Past reduction in **thermal capacity** has destabilised the power grid
 - Solutions suggested:
 - Install **Small Modular Reactors (SMRs)** near AI defence centres
 - Encourage **private sector investment** in thermal and nuclear energy
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India's Early Start in Military AI

- India initiated AI defence research in **1986** through **DRDO's Centre for Artificial Intelligence and Robotics (CAIR)**.
 - Focus areas:
 - **Combat automation**
 - **Logistics optimisation**
 - **Surveillance systems**
 - However, **China's rapid progress** and its **strategic AI partnerships** have outpaced India's early efforts.
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Global Examples: Lessons from Ukraine and Israel

- **Ukraine** has deployed **AI-enabled drones** during conflict.
 - **Israel** used the "**Lavender**" **AI system** to identify over **37,000 Hamas targets** in the Gaza conflict, regarded as the first **AI-driven war**.
 - These examples underline how AI is **already operational** in modern conflicts.
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Conclusion

The future of warfare is increasingly defined by **Artificial Intelligence**, but its success depends on robust **energy infrastructure**.

For India, it is critical to:

- Invest in **AI development**
- Reduce dependence on external tech and energy
- Ensure **energy security** through nuclear and thermal capacity

This will enable India to remain **strategically autonomous and competitive** in the evolving global security architecture.



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