

Issue Brief

**April 2026
No: 503**

**Artificial
Intelligence and
Artificial
Simulation**

Col Brijendra Singh



Artificial Intelligence and Artificial Simulation

Artificial intelligence is the future...for all humankind... Whoever becomes
the leader in this sphere will become the ruler of the world¹

—Vladimir Putin

President Russian Federation

Abstract

Scientific and technological advancement has long determined national power and military dominance. From Mongol composite bows to Gupta-era high-carbon steel and maritime innovations that enabled European empires, history shows that effective use of knowledge and adaptation to change underpin supremacy. Today, humanity stands at a transformative juncture comparable to the advent of fire and the wheel. Artificial Intelligence (AI) is rapidly reshaping all sectors by automating complex tasks, accelerating analysis, and reducing human effort. Generative AI, in particular, promises unprecedented global disruption. Its most profound impact is likely in warfare, wherein it will fundamentally alter strategies, capabilities, and the nature of conflict itself.

Keywords: Warfare Transformation, Generative AI, Machine Learning, Deep Learning, AI-powered simulation

Introduction

Advancement in Science and Technology defines the prosperity and power that a nation achieves. History is testimony to the fact that, the side that had harnessed science to its advantage has ruled the world. The Mongols fused wooden bows with animal skin to make strong, flexible and shorter bows, fit to be fired by archers on horseback². The advancement in metallurgy, during the Gupta Dynasty in India, led to induction of high carbon based steel swords in Gupta Army, which were both very strong and flexible (no surprise that the Iron Pillar at Mehrauli³ from Gupta Period has not rusted till date). In recent history, the advent of multiple sails allowed large ships to sail even opposite to the direction of wind leading to mastery of

¹ Address by Russian President on Science Day in 2017 available at <https://edition.cnn.com/2017/09/01/world/putin-artificial-intelligence-will-rule-world/index.html>.

² Mongolian Archery: from the Stone Age to Naadam". Archived from the original on 14 Aug 2020. Retrieved 12 April 2026.

³ Joshi, M.C. (2007). "The Mehrauli Dhiraj Patil Iron Pillar". Delhi: Ancient History. Berghahn Books.

Spanish, Portuguese, Dutch, French and British armadas over the world. The scientific temper, effective use of knowledge, innovation and finally the adaptation to scientific changes, marks the hallmark of every great army and consequently the nation.

Today we are standing at the cusp of history wherein the future of human race will see revolutionary changes that no human civilisation has since the advent of 'fire and wheel'. Artificial Intelligence (AI) is slowly and surely disrupting every field of work. AI can today write computer programmes, books, articles, compile, analyse data and most importantly replace human beings; the work that required hundreds of man-hours can today be done by use of AI in a jiffy. The AI that we know about today viz. the Generative AI will, in next few years usher in unprecedented changes world over. Military field will be the one that will see maximum induction and effects of AI. The war fighting that we had known, studied and fought will not remain the same in very near future.

Inception & Proliferation of AI

Artificial Intelligence: Any technique that enables computer to mimic human intelligence. An AI machine works on algorithms and data fed to it and gives the desired output.

Machine Learning: Enables machines to improve at tasks with experience. The machine here learns from new data fed to it while testing and uses it for the next iteration. It also takes into account the times when it went wrong and considers the exceptions too.

Deep Learning: Enables software to train itself to perform tasks with vast amounts of data. Since system has got huge set of data, it is able to train itself with the help of multiple machine learning algorithms working together to perform specific task.

Artificial Intelligence is the umbrella term which holds both Deep Learning as well as Machine Learning. Deep Learning, on the other hand, is the very specific learning approach which is a subset of Machine Learning as it comprises of multiple Machine Learning algorithms.

Figure 1: The AI, ML and Deep Learning

Source: Prepared by Author

Since the beginning of the Industrial Age, humans have always looked and sought for machines to undertake work on their behalf. This has reached the stage wherein we want even

the thinking and analytical work to be done by machines; and this became the advent of Artificial Intelligence (AI). However, the progress of AI has not been gradual— the earliest usage saw the British Mathematician Alan Turing’s work in breaking the German Enigma Crypto machine codes. Post World War II, not much progress was made in this field but by 1990s the world saw the Deep Blue and Gary Kasprov chess matches, pitching the human brain against computer analysis. Internet boom of 2000s emphasised data-driven methods, big data and cheaper computing. The internet boom fuelled the progress of Information Sharing, Data compilation, data analysis, rise of algorithmic based advertisement on websites. Artificial Intelligence kept picking up pace and we saw proliferation down to individual with voice assist like Siri and Alexa embedded in mobile phones. The growth of AI is in some manner faster than the Moore’e Law ⁴, which predicted that the speed and memory capacity of computers would double every two years. The decade of 2020s will be remembered as a historic decade for AI; with the launch of Open AI’s Chat GPT-3 (2020), DALL-E (2021), Chat GPT (2022) the world has now started realising the true potential of AI. Code writing, analysis, reasoning, all that required dedicated human efforts can now be done with clicks of mouse.

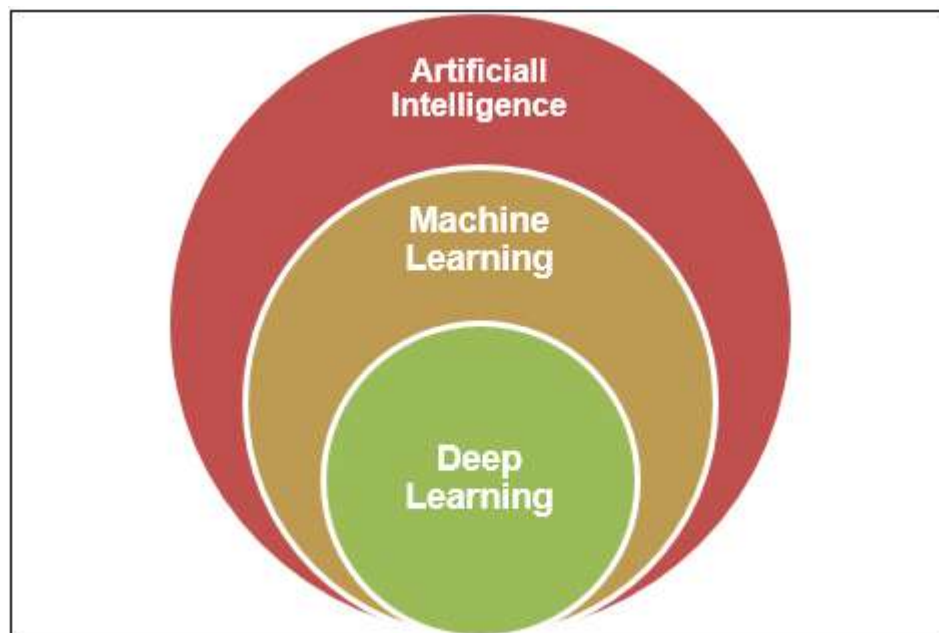


Figure 2: ML and Deep Learnings in AI Module

Source: Prepared by Author

⁴ "Excerpts from a conversation with Gordon Moore: Moore's Law" (PDF). Intel Corporation. 2005. p. 1.

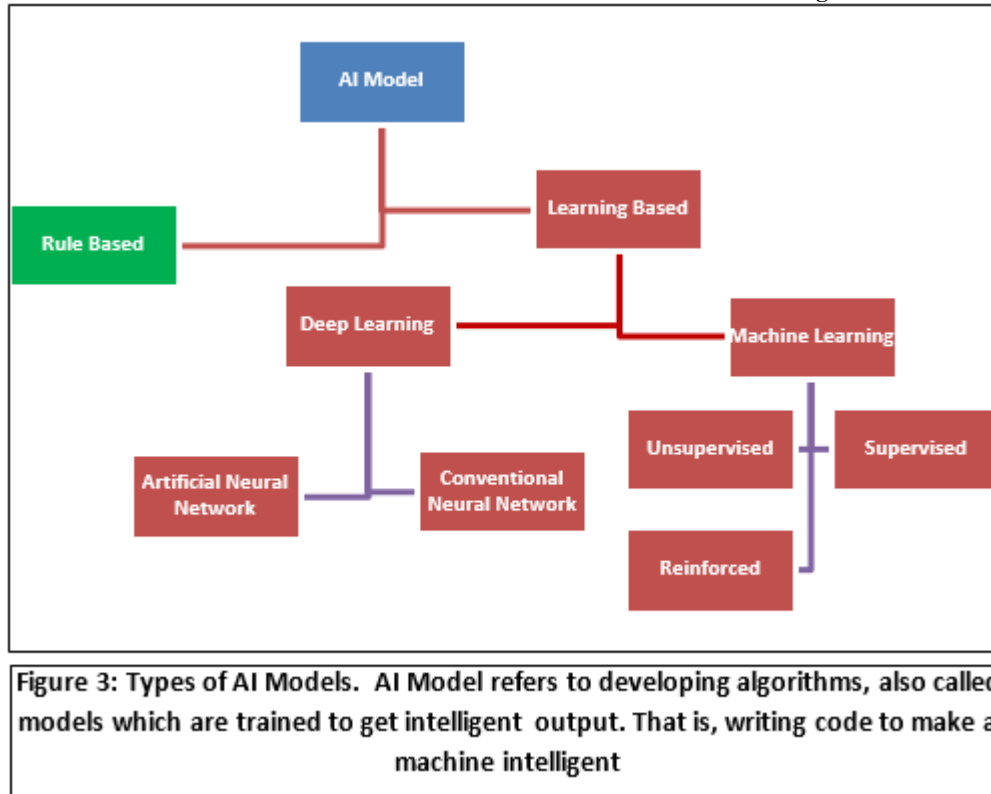
Training the AI

Artificial Intelligence is defined as the ability of a machine to imitate human intelligence⁵. To build any system or project based on AI, the primary requirement is to work around algorithm or AI models. AI Models refer to developing algorithms, also called models which can be trained to get intelligent outputs. There are two categories of AI Models viz. the Rule Based and the Learning Based. Rule based approach refer to relations or patterns or data that are predefined by the developer, the machine follows the rules or instructions mentioned by the developer and performs its tasks accordingly. For example, FAQs in a website. The second category of AI Model i.e. Learning Based Model is the one that has ushered in revolutionary changes. The Learning Based model is classified into two components — Machine Learning (ML) and Deep Learning⁶.

The Machine Learning (ML) based models comprises of supervised learning i.e. the machine is trained by feeding labelled data or fixed data and machine gives output based on what it is fed. For instance, predicted future price of goods based on past trends. The Unsupervised Learning involves feeding random data and machine calculating pattern or solution from the vast ingested data like Netflix or You Tube recommending videos to user. The Reinforced Learning enables a machine to make series of decisions without human intervention and without explicit programming for the task. The machine learns to perform task by trial-and-error method.

⁵ Russell, Stuart J.; Norvig, Peter (2021). Artificial Intelligence: A Modern Approach .

⁶ Sindhu V, Nivedha S, Prakash M (February 2020). "An Empirical Science Research on Bioinformatics in Machine Learning". Journal of Mechanics of Continua and Mathematical Sciences (7).



Source: Prepared by Author

Deep Learning enables software to train itself to perform tasks with vast amounts of data. The machine is trained with huge amounts of data which helps it to train itself around the data. Such machines are intelligent enough to develop algorithms for themselves. The Artificial Neural Networks⁷ are modelled on the human brain and nervous system; they are able to automatically extract features without input from the programmer. The Conventional Neural Networks is an algorithm which takes an input and is able to process it itself.

Warfare & AI

Warfare is one field that is always immensely affected by advancement in science and technology. The rise of AI today has opened up vast and limitless possibilities of AI based platforms in war-fighting. Even as advance research and innovations are being made in fields of AI and its usage in various fields like climate, medicine, vaccine research, town planning, supply chain management amongst others, Militarily, AI is now rapidly making inroads into war-fighting⁸. In warfare and conflicts of today, success is not determined only by kinetic strength

⁷ Hardesty L (14 April 2017). "Explained: Neural networks". MIT News Office. Archived from the original. Retrieved 14 April 2026.

⁸ Henry A. Kissinger, Craig Mundie, and Eric Schmidt, *Genesis: Artificial Intelligence, Hope, and the Human Spirit* (New York: Little, Brown and Company, 2024), 48–49.

and show of large bodies of troops but by the ability to process information, anticipate threats, respond with precision, maintaining a crystal clear picture of battle field and denying the same to the enemy. For militaries, AI is transiting rapidly from a theoretical concept of limitless mathematical calculation to a core component of a nation's military capability. AI enhances the military's capability to analyse complex data sets, learn from patterns, predict likely course of actions, anticipate threats and propose response. The integration of AI into military systems reflects a major transformation in the nature of conflict and means to terminate conflicts on favourable terms. Application of AI in warfare is not limited to autonomous drones or data analysis but it also influences communication, intelligence, cyber warfare, command & control, target acquisition, and autonomous armaments. Fields wherein AI will play a decisive role are enumerated in succeeding paras.

- ***Decision Making and Intelligence, Surveillance & Reconnaissance (ISR)***. Every modern military generates large volumes of data, satellite photographs, drone footages, electronic sensors, open source, field despatches, intelligence inputs etc. AI systems can process these humongous volumes of data and identify patterns, likely threats and recommend likely targets. AI based recognition software, analysis tool amalgamated with software tools, like prophecy software, can even guide further course of action and predict outcomes. This fused with command and control system can support strategic decision making with the shortest OODA Loop. The ability to find and decipher target and threat, analyse and generate insight and decide on engagement— all these activities, in a shorter time frame, will be the prerequisite in every future battle field.
- ***Autonomous Combat Systems***. The ability of machine to search, identify target and engage, without human interface, is the most controversial application of AI. The advancement in recognition software, robust unmanned platforms (equipped with weapon), are now increasingly and proudly being planned and fielded by all modern militaries⁹.
- ***Swarm Technology and Man-Unman Teaming***. Future generations of fighter jets, submarines, tanks are likely to operate autonomously or a swarm or as man-unman team. AI will be used to control these with remote pilots concentrating on mission execution

⁹ "Getting to grips with military robotics". *The Economist*. 25 January 2018. Retrieved 14 April 2026.

Artificial Intelligence and Artificial Simulation

and target engagement. Russian S70 Okhotnik-B system¹⁰, which teams up an autonomous UCAV with a manned Su-57, is the model that world has seen in the ongoing Russia-Ukraine war. Similarly, the swarm technology will also be sooner incorporated into the next generation of fighter jets to enable them to coordinate seamlessly with unmanned drones and UCAVs flying as loyal wingman. These autonomous / semi-autonomous combat platforms will soon be the preferred way of fighting in near future as risking human lives becomes increasingly politically and diplomatically unaffordable even for a superpower.

- ***Air Defence.*** For the air defence, locating a unique signature and scanning the skies for enemy's aircraft, is a difficult job made more difficult by stealth technology. AI systems in air defence can help detect and identify signals of interest and implement the appropriate technology to jam the signal or to intercept the threat as needed. AI can also be used to intercept incoming air threat. AI based system can determine the trajectory of missiles and other such projectiles, thereby paving way for interception before they hit their intended targets. Even for advance cruise missiles, Predictive AI can be used for identification of missiles electromagnetic signals and either jam its radio signals or redirect interceptors to destroy it before it reaches its target.
- ***Command Control & Decision Support System.*** In the battlefield, AI based system can enhance command and control by fusing intelligence and inputs gained from innumerable sensor and sources. With the plethora of sensors and inputs that have flooded the battlefield, the issue that a commander may face is that of clarity amongst the clutter of piles of inputs. AI based fusion and output system are able to undertake this manpower intensive task of filtering and collating the inputs and presenting to decision makers a neat and clean picture of the battlefield. With innovation of predictive models of AI, the battlefield simulators can also play the likely course of actions for decision makers enabling them to take real time decision in multi-domain operations that have maximum chances of success.
- ***Cyber Warfare.*** An unending warfare, Cyber Warfare is fought on a daily basis with nations and organisations launching cyber-attack regularly. AI has enabled faster,

10 "Sukhoi S-70 Okhotnik-B". *globalsecurity.org*. Archived from the original on 3 January 2019. Retrieved 14 April 2026.

automated and sophisticated offensive and defensive operations. AI powered malware, adaptive phishing and deep fakes are launched regularly.

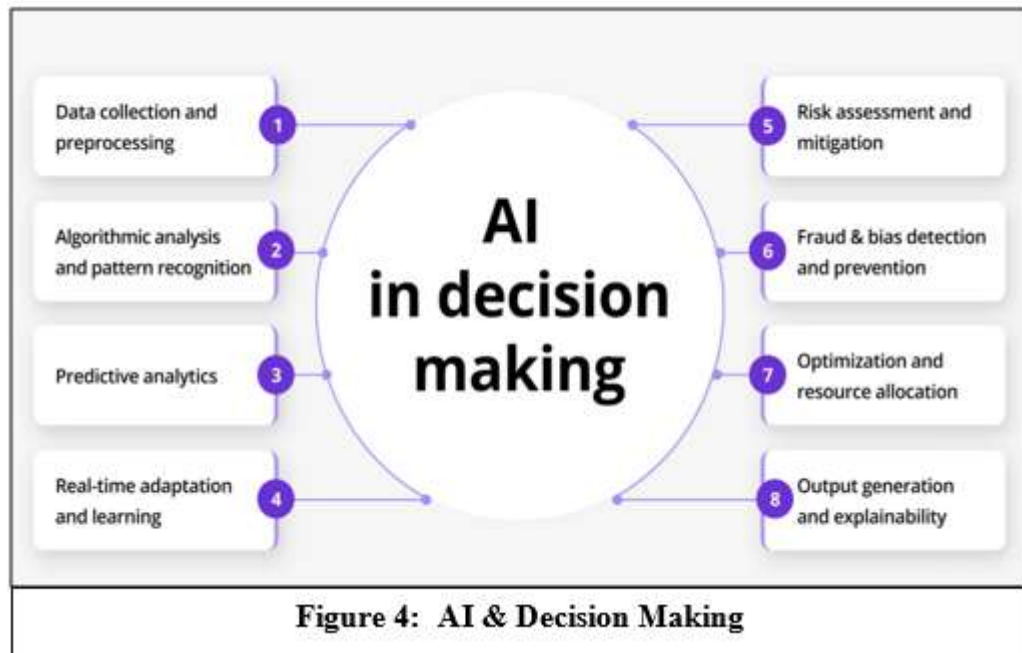


Figure 4: AI & Decision Making

Source: Prepared by Author

AI can be used to automate cyber-attacks, search vulnerabilities in opponents' networks and exploit them with precision. AI also strengthens defences via real time threat detection and identifying potential cyber threat and responds in real time. This is particularly important for protecting critical infrastructure such as power grid, communication and transport networks. The capability of AI powered system to both launch cyber-attack and detect attacks is unmatched. AI created self-learning malware that adapts to evade detection and generate personalised convincing phishing campaigns at scale, threatens every major power grid, railway network, ATCs etc. India has faced a number of cyber-attacks like the 2016 Debit Card breach, 2019 Kudankulam Nuclear Power Plant Data Breach¹¹, 2022 AIIMS, New Delhi¹² ransomware attack, to name a few. . The safeguard against such attacks also lies in AI enabled approach. AI enabled defensive capabilities allow systems to detect, analyse and respond to threats in real time, automate log analysis and conduct vulnerability scanning.

¹¹Cyber-attack on KKNPP.<https://www.pib.gov.in/pressreleaseshare.aspx?prid=1592498®=3&lang=2> accessed n 14 April 2026.

¹² 1.3 TB data encrypted and five servers affected in AIIMS ransomware attack: Centre, available at <https://www.thehindu.com/news/national/13-tb-data-encrypted-in-ransomware-attack-on-aiims-by-unknown-threat-actors-centre/article66271226.ece> accesse on 14 April 2026.

- **Artificial Simulation (AS) & War Gaming.** Making models to make miniature of the actual has been the important step to test the actual design. To simulate reality before committing to it is an important step in war planning and execution. AI driven simulation is not one technology but a family of technologies converging around a single idea of modelling the reality, to learn, test and improve the execution. The Artificial Simulation¹³ comprises of following key aspects:-
 - **AI-Powered Simulation.** The AI system process uses machine learning and neural networks to constantly learn and improve its response and behaviour. Such system initiates learning through Rule Based AI learning and Supervised Learning processes and amalgamates Neural Network to gain mastery over the subject and provide near actual situation and response and simulation to the commanders and troops.
 - **Data Generation & Training.** Generation of synthetic data to train AI model conjoined with real conflict data to enable model to bring out realistic responses.
 - **Training.** Artificial Simulation can also simulate realistic training environment for troops, pilots and for specialised roles where actuals can be painted with minimum cost, infrastructure and risk, like for example, the US Army Synthetic Training Environment¹⁴.

The Induction of AI across Global Armed Forces

Armed Forces are the ones that are always at forefront of induction of any new technology or strategy. The rapid evolution of AI has a profound impact in field of military affairs. Armies around the world are increasingly integrating AI into their folds to maintain an edge above each other. AI is being integrated to enhance operational efficiency, decision-making, surveillance and combat capability. Right from training to war fighting, AI is rapidly making inroads into war room planning. Major military powers like US, Russia, China and India are investing heavily in the development of AI driven modules. This growing global trend reflects not only technology induction but emergence of a new dimension in war fighting wherein data, algorithms and machine intelligence will play a major decisive role. Important advances made by few major military powers are enumerated below:-

United States

¹³ Artificial Intelligence in combat simulations: How AI is changing NATO and Czech Army soldier training available at <https://www.czdefence.com/article/artificial-intelligence-in-combat-simulations-how-ai-is-changing-nato-and-czech-army-soldier-training>.

¹⁴ Military Training Simulation Software: Artificial Intelligence for Armed Service members available at <https://sdi.ai/blog/military-training-simulation-software-ai/>.

The US Department of Defense has been actively running various programmes for induction of AI into US Armed Forces. Since 2025, the US Government has removed regulatory barriers to attract private players in enhancing AI capabilities in military field¹⁵. The Joint Artificial Intelligence Centre (JAIC) is the US nerve centre on exploring the usage of AI in US Armed Forces. A few major programmes that JAIC runs for US military are:-

- **Sea Hunter.** An autonomous warship programme that is designed to operate for extended periods at sea without a crew. The autonomous warship is expected to be observed by human oversight via satellite links while running on its own guidance and control systems. The ship will be armed with missiles and torpedoes and will also operate other autonomous smaller crafts.
- **Project Maven.** The extensive use of armed unmanned¹⁶ aircraft like MQ9 Reaper led to Project Maven that plans to search, identify, track and target humans moving on ground without any controller controlling the craft and weapons via satellite link.
- **Project Artemis.** Advanced drones that work even in a GPS and communication jamming battlefield by flying autonomously and undertaking its predefined task of either surveillance or targeting.
- **Stargate.** The biggest project of US Government, this project aims to develop largest AI infrastructure in US (budget of US \$ 500 billion). This project, like any other infrastructure project, has both military and civil offshoots. AI infrastructure would include data centres, power backups and AI development centres.

Russia

The military application of AI is being actively followed up by Russian Armed Forces. In 2018, the Russian government planned a 10-point agenda calling for establishment of AI and

¹⁵ Available at <https://web.archive.org/web/20250508215733/https://news.bloomberglaw.com/us-law-week/trumps-ai-policy-shift-promotes-us-dominance-and-deregulation>.

¹⁶ AI at war I What to know about Project Maven available at https://www.thehindu.com/sci-tech/technology/ai-at-war-i-what-to-know-about-project-maven/article70828735.ece#google_vignette accessed on 14 April 2026.

Big Data consortium, a fund for Analytical Algorithms and Programmes and a National Centre for AI¹⁷. Following are few major Russian AI based projects.

- **Nerehta**¹⁸. A crewless ground vehicle, Nerehta Armed Unmanned Ground Vehicle (AUGV), is developed as battlefield infantry support vehicle with the appearance of a small tank fitted with heavy calibre weapons. Such system will likely support all combat operations of Russian Army with dual capability of autonomous/ guided by operator control.
- **Glaz/ Groza**. An AI driven module that plans to control Russian target acquisition and destruction and revisit cycle. The AI module will connect all inputs from air and space based assets for target acquisition, decide on the best platform to engage the target and undertake damage assessment post engagement. This will further be progressed to an automated Command & Control System that will be integrated into the complete joint command.
- **SVOD**. The decision support AI module for tactical level commanders in field, SVOD is designed as a digital support tool that aggregates data from satellite, aerial platforms, intelligence reports and from open sources in to a single operational picture. Using automated analysis and AI-driven model, SVOD is meant to empower tactical commanders to assess situations faster and choose courses of action during combat.
- **Command and Control**. Russia has introduced AI into its C2 structures. The National Defence Management Centre (Natsional'nyi Tsentri Upravleniya Oboronoj)¹⁹ was activated in 2014. This system provides a common operating picture at National Level and collects, collates and analyses information on the military-socio-political situation across the globe. Further down to formation level Reconnaissance Strike Contour (RSC) has been designed to coordinate employment of high-precision long

¹⁷ Here's How the Russian Military Is Organizing to Develop AI". *Defense One*. 20 July 2018. Retrieved on 14 April 2026.

¹⁸ Zapad military drills showcase Russian unmanned robots' battlefield breakthrough available at: <https://www.stripes.com/theaters/europe/2021-09-15/russia-robots-war-games-zapad-ugv-2897317.html> accessed on 14 April 2026.

¹⁹ Pavel Lugin, "Artificial intelligence in the Russian Army", Riddle, 19 Mar 2021, accessed on 12 April 2026. <https://ridl.io/artificial-intelligence-in-the-russian-army/>.

range weapons. It is linked to real-time intelligence data and provides precise targeting to a C2 centre²⁰.

China

The Chinese Government, in line with modernisation of PLA, has been very active in ushering in AI led changes at all levels. The Technology firms in china has progressed with leaps and bounds and China today is one of the leading nation as far as funds allotment for research and development are concerned in field of science and technology. Chinese are aiming for ‘intelligent combat’ with “Superior performance beyond the limitations of the human body, capable of providing new tools and thus new ways of war fighting”²¹

- **Intelligence, Surveillance & Reconnaissance.** AI based platform to quickly locate hidden targets and fuse multiple intelligence sources into a single, comprehensive operating picture. Space based, airborne and terrestrial sensors to have continuous monitoring and damage assessment.²²
- **Unmanned Intelligent Combat Systems.** These are the major thrust area for PLA. Many indigenous unmanned vehicles and systems have been commissioned into the PLA. To name a few, “Caihong” family of high-altitude, long-endurance unmanned aerial vehicles, the WZ-8 high altitude stealth UAV and Sharp Sword-11 large stealth strike UAV, the HSU-001 unmanned underwater vehicle. Along with these large bodied autonomous vehicles, swarms are also being developed and tested. China has also taken approach of modifying old generation J-7 and J-8 aircraft into autonomous AI enabled fleet.
- **Cyber.** Chinese hackers are known trouble makers’ world over. AI powered cyber-attacks can innovate unimaginable tactics to infiltrate into well secured networks²³. The PLA’s Strategic Support Force (SSF) and the

²⁰ Pg 16 Chinese and Russian Military Artificial Intelligence: Drivers of National Goals by Brig Paawan Bhardwaj, USI of India, Vij books published in 2024.

²¹ “The curtain of Era of Machine Warfare is opening”, PLA Daily, 04 May 2017, extracted and translated on 12 Mar April 2026. http://www.xinhuanet.com//mil/2017-05/04/c_129588629.html.

²² Forrest E. Morgan et al., “Military Applications of Artificial Intelligence”, RAND, 2020, accessed on 13 April 2026. https://www.rand.org/content/dam/rand/pubs/research_reports/RR3100/RR3139-1/RAND_RR3139-1.pdf.

²³ Elsa B. Kania, “Battlefield Singularity: Artificial Intelligence, Military Revolution, and China’s Future Military Power,” *Center for a New American Security*, November 2017, p27.

Artificial Intelligence and Artificial Simulation

Information Engineering University has developed methods to identify and mitigate Distribution Denial of Service attacks through pattern matching, statistical analysis and machine learning.²⁴

- **Command and Control Structure.** Though not much information is available of PLA's C2 structure, the Center for Security and Emerging Technology, part of Georgetown University, USA undertook analysis of the Request for Proposals for AI based C2 systems, taken out by PLA, for industry, in year 2023 & 2024²⁵. The analysis brought out that, the PLA plans for inducting AI enabled decision support systems that can leverage open source inputs for strategic decision making and AI based tools offer decision making at tactical level, sensor enhancement tools and data fusion algorithms.

India

The National AI Mission was launched in 2024 and led by the Ministry of Electronics and Information Technology. It aims to integrate AI into all fields of life. It plans to increase Computing Capacity within the country, develop Innovation Centres for research works, make data platforms available to the researchers and achieve implementation of AI based modules in organs of the government.

- **Defence Forces.** In 2022, the Defence Artificial Intelligence Council and Defence AI Project Agency was established.²⁶ A list of 75 defence related AI projects have been finalised to be undertaken. The defence forces have also undertaken a few acquisition of AI based systems for public and private firms, the AI enabled UAVs and Swarm Drones²⁷, audio transcripts projects for autonomous combat vehicles²⁸, robotic surveillance²⁹ platforms amongst others.

²⁴ Zhang Wang, "A Study of the Prediction Path of Cybersecurity Based on Deep Learning," *Defense Technology Review*, Defense Technology Review, Vol.39, No.1, February 2018, p34-39.

²⁵ <https://cset.georgetown.edu/wp-content/uploads/CSET-Chinas-Military-AI-Wish-List.pdf>.

²⁶ Press Release, "Enhancement of Capabilities of AI Technology" 01 Aug 2022 <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1846937®=3&lang=2>.

²⁷ <https://theprint.in/defence/army-gets-its-first-set-of-offensive-swarm-drone-system-iaf-next/1368508/> dated 13 February 2023 accessed on 14 April 2026.

Recommendation for the Indian Defence Forces

- **Assessment of Capabilities Required.** AI presents plethora of options that are available for modernising the armed forces. Nations like US, Russia and China are moving on set pace to achieve their desired end state of AI fusion in their armed forces. The canvas of options of AI Modules available is very vast. But, the Indian Armed Forces, must carry out a realistic analysis on what capabilities are needed, these must project out of the envisaged future conflicts' that armed forces anticipate to fight. The ever changing nature of war dictates that services must give deep thought to the planning phase of AI modules that services plan to induct.
- **Centralised Approach for AI Induction.** AI, by its very nature, will be autonomous and self-improving. Services must not plan AI induction in water tight silos; the systems that are finalised to be inducted must be common for tri-services with an aim that AI modules must speak to each other. There cannot be any battlefield transparency if sensors are divided amongst stakeholders. This must also percolate down to platforms too like an unmanned UAV of Army must be able to be relay to Air Force Base Station and vice-versa; a team of foot patrol on ground must be able to take feed of a recce aircraft flying above. The basic essence of AI enabled war fighting is defeated if the module is not aware of the complete capabilities of armed forces. The self-learning mode of AI system should be able to recognise each other and must not see other module as alien. Similarly, AI based logistic modules must bring in a centralised efficiency both during war and peace.
- **AI as Tool of Optimisation.** Induction of AI must increase combat capability and logistic efficiency of armed forces. The AI based system, induction of stealth cum autonomous platforms, infrastructure for data centres (as defence forces will be needed to keep their networks and data isolated from other networks), dedicated military satellites, optics fibre networks etc. will require major capital budget. The induction of AI enabled systems must aim to optimise manpower especially those wherein major task of logistic,

²⁸ <https://www.thehindu.com/news/national/army-inducts-robotic-mules-drones-high-altitude-tents-under-evaluation/article68675123.ece>.

²⁹ <https://www.businesstoday.in/technology/news/story/indian-army-working-on-ai-autonomous-combat-vehicles-robotic-surveillance-platforms-more-report-420964-2024-03-11>.

surveillance and communication are automated. Service HQs must brainstorm the optimisation that they can undertake.

- ***Time Bound Induction and Collaboration.*** The process of inducting AI modules in armed forces should be on a set time table. The world over, AI is being driven by handful of top tech firms like Google, Meta, Open AI etc. These firms have invested large sums of money into research of AI and are today the forerunners in this field. We must realistic assess that, though Indian IT firms like Wipro, TCS, Tech Mahindra etc., have made progress in this field, but the major players setting the direction of AI are multi-nationals firms. Realistic capability of indigenous industry must be assessed and industry be allowed for active collaboration with these tech giant multi-national firms to bring about solutions for domestic consumption. With the Government of India's major push via National AI Mission, the armed forces must also collaborate with academia and tech firms by giving them their requirements and asking for tailor made solutions.
- ***Enhancing of Technical Talent into Services.*** The handing, servicing and repair of AI based platforms will need more and more personals with technical knowledge in services. There is need for undertaking major changes in the human resources structure of services. Induction of technically trained manpower, changes in syllabus at training institutes, provisions for short term services of highly qualifies technical people in services are some of the few measures that service HQs can take to logical conclusion.

Conclusion

AI is the new revolution, that is changing the world, as we know it, in a very fast pace. It is not a script of a science fiction wherein weapons and systems controlled by machines fight war against each other, then it is a hard reality of today. Future wars will be fought by AI enabled systems. The integration of AI into weapon, surveillance, communication and decision making systems marks a profound shift in the nature of warfare, redefining the way wars are fought. Like the nuclear power, one day, advancement in AI may also prevent wars amongst two equally powerful AI enabled nations; AI will also define deterrence and prevention of conflict. However, the growing reliance on AI also raises complex legal and ethical challenges. The delegation of life and death decision of human beings to machines also questions the established rules of humanity. Risks such as bias by machines, vulnerability of system, cyber-attack of system to corrupt decision making, may cause havoc on the system. Hence, there must be ethical

safeguards and robust government frameworks, international treaties and transparency that will lead to the development of AI as per humanitarian principles.

AI will have revolutionary impact on nations, comparable to the industrial age, during which nations that embraced science and logic propelled into prosperity, development and control over the resource and nations of the world. In a similar manner, the mastery over AI will lead to economic prosperity of nation, enhance military capability and elevate nation's standing in world order. Nations that harness AI will not only achieve technological superiority but also strengthen their strategic and geopolitical position, and emerge as respected and powerful nation in world order.

As a nation we must focus on developing indigenous AI capabilities. World over there are handful of multi-national firms that are running the race of AI; our technology firms must not get limited to "outsourcing" for global companies and undertaking tasks for them; instead, they must invest heavily into innovation and research labs within their campuses and also in academic institutes all over the country. Comprehensive National Power cannot be run on AI modules purchased as licence users from US firms, like the computer operating systems. The Government vide its National AI Mission has set the stage for the technical community of the country to work in the direction of *Atamnirbharta* in this most crucial technology of tomorrow that will define the future of mankind for next millennium.

About the Author

Colonel Brijendra Singh is an Infantry Officer and is presently serving as a Senior Research Fellow at the Centre for Land Warfare Studies (CLAWS).



All Rights Reserved 2026 Centre for Land Warfare Studies (CLAWS)

No part of this publication may be reproduced, copied, archived, retained or transmitted through print, speech or electronic media without prior written approval from CLAWS. The views expressed and suggestions made in the article are solely of the author in his personal capacity and do not have any official endorsement. Attributability of the contents lies purely with author.