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India's Military Application of AI:

Implications for Pakistan

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CSSPR

The Centre for Security, Strategy and Policy Research (CSSPR) is an autonomous policy research center housed in the University of Lahore(UOL), Lahore. It aims at generating research on issues relating to contemporary security and strategic aspects that affect Pakistan's domestic security environment and its international relations with other countries of the world. The Center aims to generate research-driven and nuanced discourses on how best to address security and strategic challenges that deny Pakistan the opportunity and ability to play its role as a responsible seventh Nuclear Weapon State in the world.

The Center conducts research, publishes, and holds conferences on a broad range of regional and international security, strategic, peace and conflict issues. Through this Center, we aim to establish national, regional and international linkages and collaborate with universities, think tanks, research institutes and eminent scholars from around the world, enabling national and international scholars and our students to use CSSPR's platform to deliberate upon issues that carry a global impact.

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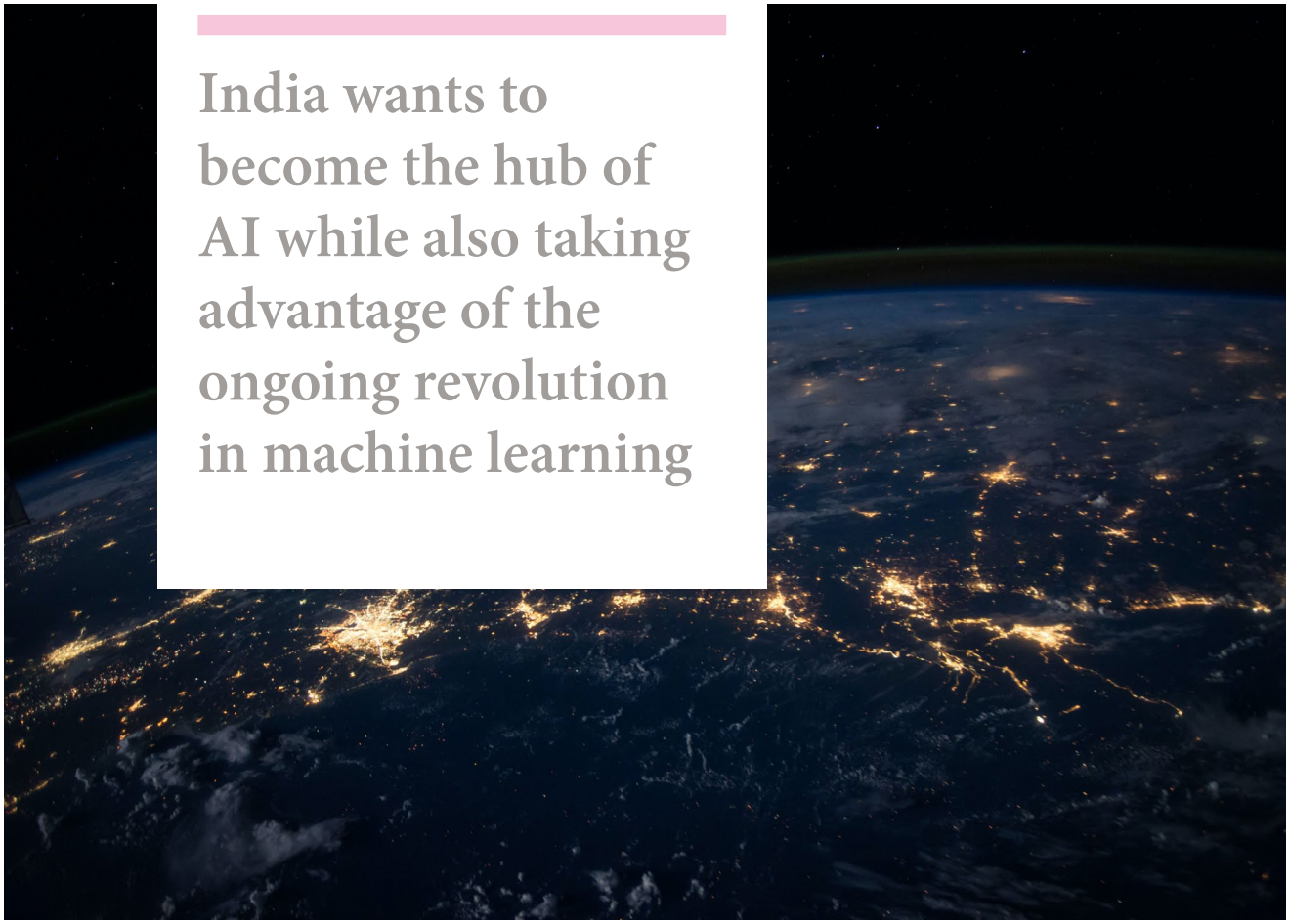
India's Military Application of Artificial Intelligence: Implications for Pakistan

Any artificial system that does the job under unreliable and unpredictable circumstances through simulating human intelligence processes, and can learn from practices and improve performances with the showing of data sets comes under the remit of Artificial intelligence (AI). It is a fast, new class of technology which, if used, could have significant implications for national security. China and India are inducting AI technology for a range of military purposes. India's Prime Minister Narendra Modi stated on October 5, 2020, during the inauguration of RAISE 2020 virtual summit, that India should become the hub of AI, with Indians taking the lead in creating a vibrant ecosystem. Though his focus during that address was on using AI as a vehicle of social transformation, India has not remained oblivious to the military utility of AI. In 2019, the Indian Ministry of Defence established a high-level Defence AI Council (DAIC) which was assigned the task of providing strategic direction to adopt AI in the military domain. India is establishing a joint partnership between the industry and government for the deployment of such technologies. In addition, Artificial Intelligence Task Force has been working to employ AI to give India a military edge. On the other hand, China's State Council released the country's plan for developing AI in July 2017 that delineated China's bid to become the world leader in AI by 2030. Thus, the two South Asian giants are jumping on the AI bandwagon, something which will have implications for Pakistan.

India wants to become the hub of AI while also taking advantage of the ongoing revolution in machine learning. Therefore, it initiated a series of development programs in the area of AI through the transformation of its policy think tank, NITI Aayog, on January 1, 2015. India's shifting priorities were visible when it allocated 30.7 billion rupees ($462 million at current rates) in 2018 for a digital India programme which is a scheme aimed at encouraging AI, machine learning, 3D printing, and other digital technologies. It is facilitating research and development aimed towards creating an AI-driven military system. According to the final reports of the Ministry of Defence's AI Task Force 2018, India should become a major power of AI in defence (land system, cyber, nuclear, and biological warfare). Additionally, it is increasingly integrating AI within the biotechnology sector for detection, identification, and sanitization of threats. For instance, it is



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using unmanned ground vehicles and robots in contaminated zones that would strengthen its biodefense system. India's Defence Research and Development Organisation (DRDO) has established a Centre for Artificial Intelligence and Robotics (CAIR), a laboratory dedicated to AI-based research.

Cognizant of the need to use AI for a variety of purposes, Pakistan's President Dr. Arif Alvi launched the "Presidential Initiative for Artificial Intelligence & Computing (PIAIC)" in 2018, to promote education, research, and business in AI. This initiative is the first and only official step which highlights Pakistan's ambitions in this area. Pakistan is seeking the assistance of China to make this project a success story. China's telecommunications company, Huawei, launched an eight-day training program for Pakistani trainers under the auspices of the PIAIC in 2019. According to a 2020 report released by the Stockholm International Peace Research Institute, Pakistan's investment on AI is very low and it is dependent on foreign technology, as it invested only 367 million rupees in 2018 for three projects on AI. In addition, the National Centre of Robotics and Automation (NCRA) at the National University of Sciences & Technology (NUST) is also included in this investment.

While India is investing $480 million annually and a single U.S University, the Massachusetts Institute of Technology (MIT), unveiled a $1 billion plan to develop a new AI college. Pakistan's investment in the field of AI is relatively low. Pakistan's current set of measures is insufficient for it to create a robust AI scaffold for civil and military purposes. Further, Indian leaders have categorically argued that the pursuit of AI in military is very important for their country's national security.

India is modernizing its nuclear arsenal with the addition of new podiums to the existing delivery systems. India built Rustom-2 (or Tapas 201), a medium-altitude long-endurance unmanned combat aerial vehicle (UCAV) indegenously in 2018. It is working on multiple projects such as integrated early-warning systems, the Multi Agent Robotics Framework (MARF) system, which is intended for robot teamwork on surveillance and reconnaissance, a number of robotics or unmanned systems that would increase self-sufficiency such as Matsya Unmanned underwater vehicles (UUV) for undersea surveillance purposes, and the Autonomous Unmanned Research Aircraft (AURA). At the same time, several Indian analysts affirmed that DRDO has developed and remotely activated robot vehicles for many military tasks, to detect explosive weapons and dispose chemical, biological, radiological and nuclear reconnaissance. They are inducted in some special military units.

Furthermore, the application of AI is advantageous in that it would help in sharpening military capabilities by providing better information, enhancing decision-making capacities, and increasing the speed of engagement. The induction of machine learning facilitates faster and advanced military operations. AI is capable of handling larger volumes of data more professionally than conventional systems and it improves self-control and self-regulation due to its decision-making capabilities. It can help monitor the development related to nuclear weapons, conventional operations, and sensing cyber attacks. Nonetheless, it also has negative implications as it would lead to an arms race between states by increasing misunderstanding about the capabilities of adversaries. It would intensify the threat of human data spoofing and data poisoning since data is the primary ingredient in machine learning.

Moreover, India's use of AI in the military sphere, nuclear weapons, or missile systems would have implications for strategic stability in South Asia. India's application of AI in the military domain would enhance its defensive and offensive capabilities. Improvements in India's offensive capabilities would force Pakistan to take the required steps to maintain and strengthen deterrence stability. Given that the induction of AI in early warning system is critical to reducing decision-making time, the temptations for preemption would increase, something that needs to be taken seriously in the context of India's bid to increase its counterforce options in its nuclear arsenal. Pakistan's drive to induct AI and machine learning would help, among other things, enhance situational awareness about nuclear weapons during peacetime and crisis.

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Additionally, even basic advancements in autonomous ISR, early-warning, and BMD capabilities can generate false alarms and increase the prospects of miscalculations leading to accidental and inadvertant escalation. In addition, the machine learning system would increase the risk of adversarial attacks such as a cyber attack, data extermination and spoofing in South Asia. AI's military technology would accelerate the speed of warfare due to the ever-increasing relinquishment of human control. The non-state actors can also benefit from the dual use of technology since South Asia is still not free from the scourge of terrorism. Since AI is driven by the private sector, and not necessarily by the government, commercial developments in machine learning would lower the fence of admission for non-state actors. They could violate national security systems and bring greater destruction through AI because machine learning would make their access to lethal weapons more easy. Furthermore, AI technology would increase cyber threats for nuclear Command and Control (NC2) systems. Machine learning and AI, thus, pose great threats for strategic stability in South Asia by increasing the risk of pre-emptive strikes.

Pakistan does not have the financial muscle which India has. However, it can compensate for its industrial weaknesses through its cooperation with China. Morover, in the short term, China could be a reliable source of technology in this regard. However, in the long run, Pakistan has to develop an indigenuous, technology-oriented industrial base in order to enhance the prospect of keeping pace with technological advancements that are critical for its defense and security. The government should ensure that its commitments to changing the country's Science & Technology and industrial landscapes are fulfilled going forward. According to Saima Sial, a Senior Research Officer at the Center for International Strategic Studies (CISS), the development of AI's defence ecosystem within Pakistan involving corporations, startups, educational institutions, defence policy experts, defence manufacturers, and through Research and Development (R&D) in this domain can enhance defence attentiveness. Furthermore, Pakistan's R&D in AI is necessary for increasing the competitiveness of its research at an international level, and to maintain the ever so tenuous strategic stability of the region.