

Regulating Artificial Intelligence and Its Application in Development of Autonomous Weapon Systems and Strategic Positioning of India

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[Abstract: While the fast-moving field of artificial intelligence has demonstrated the potential of immense benefits, fears have been expressed about its application in the development of autonomous weapon systems. Voices have been raised for regulating research and development in artificial intelligence. Misplaced regulations have the potential of derailing the accruing benefits and stifling innovation. Limiting some very specific applications, artificial intelligence seems to merit regulated development. A major case in point is the deployment of artificial intelligence in the development of lethal autonomous weapon systems, that operate independently of human inputs. An open-ended group of government experts along with several stakeholder groups has been deliberating over the economic, military, technological, legal, and moral issues surrounding lethal autonomous weapon systems. While a number of parties have called for a pre-emptive ban on lethal autonomous weapon system, there are other state parties who argue that the system has inherent advantages, which are overriding. The debate among state parties is still in its nascent stage. Amidst a call for a ban on lethal autonomous weapon systems, India needs artificial intelligence powered systems to keep the operational preparedness of its armed force who face the twin challenge of non-state actors and active international borders. Thus, India should advocate for international regulations covering development, use, and trade of lethal autonomous weapon systems—an approach that would be in line with the approach of the major powers as well.]

It is apprehended by many that Artificial Intelligence (AI) would turn robots into a master class that would subjugate society and may even destroy it. Others fear that AI is enabling governments to mass produce autonomous weapons—“killing machines”—capable of choosing their own targets, including innocent civilians. Eminent economists are of the view that AI, unlike previous technologies, has the potential to destroy many more jobs than it creates, leading to major economic disruptions. Therefore, there are calls for imposing government regulation on AI research and development.¹

Government regulation may be necessary to prevent harm; however, is a slow-moving instrument and is subject to political interference and distortion. When

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¹ Etzioni, A. and O. Etzioni (2017), “Should Artificial Intelligence Be Regulated?” *Issues in Science and Technology*, Vol. 33, No. 4.

applied to fast-moving fields like AI, misplaced regulations may stifle innovation and derail the enormous potential benefits that AI can bring in several sectors. To address this dilemma, there is a middle way: avoid regulating AI research with the potential harms of AI systems.²

A problem with regulating AI is that it is difficult to define what AI is. There is no clear definition of AI as it is not any one thing, and the risks and considerations are very different in different domains. One well-known definition of AI is that it is an activity which is devoted to making machines intelligent, and intelligence is that quality which enables an entity to function appropriately and with foresight in its environment. A popular understanding of AI is that it enables a computer to think like a person. Others use the term to refer to a computer that uses algorithms to process large amounts of information and draw conclusions and learn from their experiences. Machines equipped with AI, however smart they may become, have no goals or motivation of their own unlike human beings.

Regulating AI on an international level is a highly challenging task. AI work is being carried out in many countries, by large numbers of government employees, business people, and academics. It is used in a variety of fields and number of machines, from passenger planes, search engines, industrial robots to virtual nursing aids. Thus, restrictions on the development of AI as a field are likely to impose very high human and economic costs. Artificial intelligence programmes already help detect cancer, reduce the risk of airplane collisions, and are also implemented into the software of old-fashioned cars, making them much safer. Computerised personal assistant's such as Apple's Siri, Microsoft's Cortana, and Amazon's Alexa use AI to learn from their users' behaviour how to serve them better. Artificial intelligence is used by all major credit card companies in fraud detection programmes, to surveil multiple screens from security cameras, and detect items that a human eye may miss.³

² Etzioni, O. (2018), "Point: Should AI Technology Be Regulated?: Yes, and Here's How," *Communications of the ACM*, Vol. 61, No. 12, pp. 30–32.

³ *Op. cit.* 1

Suggestions to limit some very specific applications of AI seem to merit much closer examination and action. A major case in points is the development of autonomous weapons that command AI to decide when to fire, how much force to apply, and on what targets. A call was made, including by many robotic and AI workers, way back in 2015 to the United Nations to ban the development of weaponised AI that could operate ‘beyond meaningful human control.’ A pause in developing killing machines until the nations of the world mutually set limitations on the deployment of autonomous weapons seems practical. As regards the weapon systems, there are three levels of autonomy. One, when human command guides the robot’s choice of target and deployments of force. Two, when weapons may select targets and deploy force without specific command from the humans; however, a human could override the robot’s decisions. And three, fully autonomous weapons that operate independently of human input. World community needs to agree to a ban on fully autonomous weapons.⁴

Fully autonomous weapons have come to be termed as lethal autonomous weapon systems (LAWS). The Fifth Review conference of the Contracting Parties to Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons, also known as CCW Convention, in its meetings in 2016 had decided to set up an open-ended group of governmental experts to closely examine military, technological, legal, and moral issues arising out of LAWS. The first meeting of experts from 91 of the CCW’s 125 contracting parties took place in November 2017 in New York under the chairmanship of India. It was attended by representatives from international organisations, NGOs, academia, industry, and civil society. It was felt that LAWS would increase the efficiency of operations and minimise the harm to soldiers; the downside, however, is that the autonomous weapon systems could go beyond human control. It was also noted that LAWS could also fall into the hands of terrorist and other undesirable groups. Proliferation of LAWS would raise many security issues. Questions would also be raised over international humanitarian law, which rests on the principles of distinction, proportionality, and precaution as more and more AI-

⁴ *Ibid.*

powered machines are deployed to help in decision-making, which in turn raises the question of accountability as the degree of human involvement reduces. LAWS raise the question of whether ethical questions can be coded into AI-powered machines as legal and ethical questions are shifted to the technical domain. Can machines be responsible, creative, and compassionate? All these issues are difficult to resolve. Restrictions on technologies will be opposed by economic interest and technology generators. Technology rests in the hands of massive and powerful companies, which are often stronger than governments and have much larger financial and human resource capacities. Over-regulation of technology will deprive the world of positive benefits. But the challenges posed by autonomous weapon systems cannot be wished away. Such systems are already in use. For example, drones represent a step towards autonomous system as they are remotely controlled by humans who, in turn, decide on the basis of surveillance, analytics, and weapon technologies. A faulty determination either by surveillance satellite or computing machines can result in inaccurate decision.⁵

India needs to take cognizance of emerging technologies like AI, machine learning, and big data analytics, and develop capabilities in these areas to keep itself engaged with issues surrounding LAWS. India setup a task force, chaired by C. Chandrasekaran, Chairman Tata Sons, which includes members from research organisations, contractors, and military with a view to strengthening AI-based weapon systems. The key points highlighted by task force are⁶:

- To establish tactical deterrent in the region
- To support the peaceful and commercial use of AI technologies
- To mitigate risk
- To visualise potential transformative weaponry of future
- To keep a check on non-state actors

⁵ The Economic Times (2018), "India Should Take Up Challenge of Lethal Autonomous Weapons Systems," February 15.

⁶ GOI (2018), "Raksha Mantri Inaugurates Workshop on AI in National Security and Defence," Press Information Bureau, Government of India, Ministry of Defence, May 21. Available at: <https://pib.gov.in/newsite/PrintRelease.aspx?relid=179445>

- To develop intelligent, autonomous robotic system
- To enhance capabilities for collection and analysis of data and also creation of data
- To bolster cyber defence

The controversies surrounding autonomous weapons must not obscure the fact that like most technologies, AI has a number of non-lethal uses for militaries across the world including for the Indian military. These are, on the whole, not as controversial as the use of AI for autonomous weapons. There are three areas where AI can be readily deployed without controversy. First is logistics and supply chain management where many Indian companies in civilian sector have built considerable expertise in deploying AI as it does not require much effort to transfer the civilian technologies to meet military needs. Second is cyber operations. As cyber warfare becomes faster, more sophisticated, and more dangerous, it becomes necessary to develop both offensive and defensive cyber-war capabilities both to protect the military's own assets and communication links, and to attack similar assets of opposing militaries. Specifically trained AI systems could actually prove to be far more efficient and effective than humans for such tasks. Third is Intelligence Surveillance and Reconnaissance (ISR), which has already been put into use by various countries, including the US and China. To fully exploit the three specific use cases, the Indian military needs to build a close working relationship with private technology sector in India working in the AI space.⁷

Thus, amidst calls for a ban on lethal autonomous weapons (LAWS), India needs to plan for and strengthen its AI based systems to help the operational preparedness of the armed forces in a significant way. This may include unmanned tanks, vessels, aerial vehicles and robotic weaponry, which will have extensive use in future wars. At the same time, India should remain engaged in the issues surrounding LAWS.

⁷ Reddy, R.S. (2018), "How AI Can Help the Indian Armed Forces," *Livemint*, March 5.

The introduction of autonomous weapons will profoundly change the nature of war and will also affect the understanding of laws of war. A fierce international debate has started over the legality and use of such weapons. India is uniquely placed to take a lead in the global discussion about this issue. India would have to view the development and deployment of autonomous weapons through the lens of security needs and national interest.⁸

A number of parties have called for a preemptive ban on the development of autonomous weapon systems. It is argued by such parties that these systems would be unable to adhere to the current laws of war and that it is unclear who would be liable in the case of wrongful death of civilians, to give an example. Other parties, such as the US, argue that these systems may prove beneficial in reducing casualties and improving efficiency in defensive capabilities. India faces threats from both state and non-state actors, including a substantial portion of its international borders composed of rugged terrain. Unmanned AI based systems could be more effective and efficient in such areas. Besides, indigenous development of autonomous weapons could boost India's domestic industry and export potential. Thus, any preemptive ban on development of autonomous weapon system would be premature. India must advocate for international regulations that cover development, use, and trade of these systems instead. Such an approach is likely to ensure compliance by the major powers as well. While the international debate on autonomous weapons is still in the nascent stage, the systems may be developed and deployed before an international regime sets in. International community must consider developing global standards in due course. Domestic regulations may be developed to comprehensively address the development and use of autonomous weapons so that India can strategically position herself to participate in the deliberations for setting up global standards.⁹

⁸ *Ibid.*

⁹ *Ibid.*