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SHOULD ARTIFICIAL INTELLIGENCE BE GIVEN POWER TO KILL?

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ЧИ ПОТРІБНО НАДІЛЯТИ СИЛОЮ ВБИВАТИ ШТУЧНИЙ ІНТЕЛЕКТ?

The greatest challenges of appropriately regulating artificial intelligence (AI) are social rather than technical. Several respected scholars and technology leaders warn that AI is on the path to turning robots into a master class that will subjugate humanity, if not destroy it. Others fear that AI is enabling governments to mass produce autonomous weapons – «killing machines» – that will choose their own targets, including innocent civilians. The issue of moral and legal compliance of new technology becomes a corner stone for making a decision.

While AI has become an ever-increasing part of consumers typical daily lifestyles, the military uses of AI will have an even more effect in the global military market. A recent report from Zion Market Research said that the global artificial intelligence in military market was valued at approximately USD 4,800 million in 2018 and is expected to generate around USD 16,300 million by 2026, at a compound annual growth rate (CAGR) of around 14,5% between 2019 and 2026 [1].

What is the scope of AI innovation in a military context, and why is it likely to be particularly disruptive? AI is a general-purpose, «enabling» technology; with the aim of supporting, substituting for, and improving over (in terms of accuracy, speed, and/or scale) human performance in tasks such as «pattern recognition», «prediction», or «decision-making». While these tasks are individually quite bounded and narrow, the sheer domain-generalness of such tasks – the range of contexts in which, say, being able to recognize patterns comes in useful – means that AI can be integrated in a wide range of military functions, and embedded in and distributed across a range of platforms and cloud systems [2, p. 132-133].

The military uses AI in systems of non-combat, autonomous weapon systems and on the basis of warfare platforms. Defense forces across the world are embedding AI into weapons and other systems on land, airborne, naval and space platforms from Surveillance satellites that monitor the moves of the rivals and spy on all their communication lines cyphering out any information that's detrimental. AI used on these platforms has enabled for the development of efficient warfare systems, less reliant on human intervention, a rise in synergy and enhanced performance of warfare systems while requiring less maintenance. AI is also expected to empower autonomous and high speed weapons to carry out attacks.

Nowadays, robots in the military are an alternative to human soldiers. These robots are being designed to handle a broader range of combat tasks, from picking off snipers to carrying out target acquisition with greater efficiency as compared to human soldiers. They can be deployed in situations and areas which are dangerous and can kill or maim troops. Army robots can provide a backup during heavy artillery fire and reduce the number of casualties. They can also map a potentially large hostile area by accurately detecting a variety of threats.

Military robots come in different shapes and sizes depending on the requirement, and they may be remotely controlled or fully autonomous. Robots consist of different types of payloads depending on the application. Depending on the application requirements, sensors, detectors, weapons, programmed software, and other payloads can be equipped on robots used in the military.

Combat support robots in the military are deployed in combat support application for anti-submarine operations, laying mines, fire support, electronic warfare, battle damage management, strike missions, aerial refueling, etc. They also play a vital role in critical

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missions due to their enhanced capabilities and a certain degree of autonomy. The ability to achieve information superiority, minimize collateral damage, and fight effectively in urban areas against widely dispersed forces are the advantages offered by robots. Technological developments in army robots have led to equipping them with weapons to offer lethal capabilities in combat missions, along with the ability to make decisions without human intervention.

A group of robotics and AI researchers, joined by public intellectuals and activists, signed an open letter that was presented at the 2015 International Conference on Artificial Intelligence, calling for the United Nations to ban the further development of weaponized AI that could operate «beyond meaningful human control». The letter has over 20,000 signatories, including Stephen Hawking, Elon Musk, and Noam Chomsky, as well as many of the leading researchers in the fields of AI and robotics. The petition followed a statement in 2013 by Christof Heyns, the UN special rapporteur on extrajudicial, summary, or arbitrary executions, calling for a moratorium on testing and deploying armed robots. Heyns argued that «A decision to allow machines to be deployed to kill human beings worldwide, whatever weapons they use, deserves a collective pause»[3].

However, the reality is that AI is already a growing element of the military strategy of many countries, while the EU and other countries such as China have been engaging for some time on the issue of AI ethics. Looking at ethical codes, some legal experts argue that ethics themselves are too subjective to govern the use of AI, according to the MIT Technology Review [4]. The current discussions around Killer Robots often obfuscate and render «invisible the constitutive technical operations they arise from». Killer Robots or Marx's automatic systems of machinery are easy targets for criticism because they give face to the threat. However, the criticism that takes these objects as its target misses a larger cultural context and a set of techniques, principles and justifications that allow these systems to be built in the first place. To rephrase, the distinctions between combatant and non-combatant, human and machine, life and death are not drawn by a robot. While it may be the robot that pulls the trigger, the actual operation of pulling is a consequence of a vast chain of operations, processes and calculations. Cultural techniques, such as machine-learning, pattern recognition, predictive modeling and all the other buzzwords of STEM are behind these ontic and recursive operations.

In a culture where autonomous weapon systems exist, but also where cars drive themselves, planes fly themselves, stocks are traded by robots and healthcare is moved to smart homes, human life is being re-evaluated. While the Campaign to Stop Killer Robots focuses on systems intended to kill, some researchers argue that Killer Robots exist also in different fields than the military, and exploring the ways they draw distinctions between life, death and killability may open new perspectives for robot ethics and cultural studies. Understanding the cultural techniques of computational logic and automation of our environments is essential here. The technologies that on the battlefield of the future will make decisions between life and death, when analyzed in terms of their techniques, may be the same technologies, control architectures and mechanisms that can be used in different fields of our culture. Thus, while Killer Robots are an obvious manifestation of a historical imaginary of the 21st century, where automation has the potential to become universally destructive for humanity, they are also products of particular cultural techniques which «participate in the formation of subjects, as well as constitute ways of knowing and organizing social reality» [5, p. 119-123].

Finally, in line with the ideas of the study of killing machines should be expanded to include the opposite question: whether it is ethical to use a person in high-risk situations when a robot can carry out the same mission as well, if not better. This question applies to clearing mines and IEDs, dragging wounded soldiers out of the line of fire and civilians from burning

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buildings, and ultimately, fighting wars. If philosophers can indulge in end-of-the-world scenarios engineered by AI, then we can speculate about a day when nations will send only nonhuman arms to combat zones, and the nation whose machines win will be considered to have won the war [3].

From a moral point of view it is problematic to understand whether such capabilities of AI comply with moral standards or not. For example, a detection of an internal psychological state of some person and use of this knowledge, is it merit from moral point of view? As we know, explosives, a firearm could be used in a legal and ethically acceptable way. Somebody can use great power of AI in an ethically right way to predict suicide or other negative consequences of person's psychological state. At the same time, such powerful AI is a serious weapon against society and its use has to be controlled by law [6].

In summary, one may argue that certain types of artificial intelligence systems should be regarded as dangerous and their use should be limited to the broad masses. A major case in point is the development of autonomous weapons that employ AI to decide when to fire, with how much force to apply, and on what targets. In accordance with logic on legal restrictions of a traditional «dangerous thing» use, it seems that the legislator has to consider such an opportunity in case of most powerful AI systems. At this stage of understanding, we believe that it should not be a discussion on a total ban of software or hardware but an attempt to justify reasonable legal control.

There are two means by which human control may be maintained over AI. First, good design of AI systems allows us to ensure that intelligent systems operate within the parameters we expect. The second means of maintaining human control is by holding those who build, own, or operate AI accountable for their systems through law and regulation.

On this basis, we conclude that societies both can and should maintain control over artificial intelligence. More recent evidence shows that significant progress is being made in achieving this goal – progress made by technology companies, regulatory bodies, governments, professional organisations, and individual citizens including software developers who are taking the time to understand the social consequences of technology.

References

- 1.Tech Brief: Artificial Intelligence Having Huge Influence on Global Military Market. Available at: <<https://www.prnewswire.com/news-releases/tech-brief-artificial-intelligence-having-huge-influence-on-global-military-market-300962714.html>> [Accessed 22 November 2019].
- 2.Maas M. Innovation-Proof Global Governance for Military Artificial Intelligence?: How I Learned to Stop Worrying, and Love the Bot in Journal of International Humanitarian Legal Studies, 2019, vol. 10, issue 1, p. 129-157.
- 3.Etzioni A., Etzion O. Should Artificial Intelligence Be Regulated? Available at: <<https://issues.org/perspective-should-artificial-intelligence-be-regulated>> [Accessed 21 November 2019].
- 4.Tannam E. AI ethics and the military: A tangled web. Available at: <<https://www.siliconrepublic.com/enterprise/ai-ethics-military>> [Accessed 21 November 2019].
- 5.Karppi T., Böhlen M., Granata Y. Killer Robots as cultural techniques in International Journal of Cultural Studies, 2018/3, vol. 21, issue 2, p. 107-123.
- 6.Dremluiga R. Prisekina N. Artificial Intelligence Legal Policy: Limits of Use of Some Kinds of AI. Available at: <http://delivery.acm.org/10.1145/3320000/3316627/p343-7.Roman.pdf?ip=185.53.79.244&id=3316627&acc=OA&key=4D4702B0C3E38B35%2E4D4702B0C3E38B35%2E4D4702B0C3E38B35%2E4269A003652AF26D&__acm__=1574462833_97c3f13757196a0b0fffa09ce58cd5bb> [Accessed 20 November 2019].