## Research Report

**Assembly:** General Assembly 1

**Topic:** The question of weaponizing artificial intelligence in war

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## Introduction

As humanity progresses into the early 21st century, the advancement of artificial intelligence (AI) has heralded a new era worldwide. Ranging from self driving vehicles to predicting natural disasters, AIs are versatile and ubiquitous, transforming industrustries and catalyzing the process of globalization. The technology industry is growing rapidly, and technological development has become a rat race. The use of artificial intelligence (AI) has allowed for a futuristic warfare battleground, and countries race to become the leader of the intense technology race. Countries are now developing an autonomous weapon system (AWS) and increased weaponizing of AIs due to the several benefits of using AIs. Although AIs may be more accurate and does not cost human lives, the question of weaponizing AIs brings about complex security issues not only for each individual nation but for the future of humanity.

## Definition of Key Terms

**Artificial Intelligence:** simulation of human intelligence in machines that are programmed to think like humans and mimic their actions.

**Unmanned Aerial Vehicles:** aircraft without a human pilot on board and a type of unmanned vehicle. Usually controlled by the use of AI but is also sometimes controlled manually. The size of these vehicles vary and the weapons and destructive capacity varies on what type of weapon it can carry.

**Lethal autonomous weapons (LAWs):** type of autonomous military robot that can independently search for and engage targets based on programmed constraints and descriptions.

**Deep learning:** subset of machine learning in artificial intelligence (AI) that has networks capable of learning unsupervised from data that is unstructured or unlabeled. Currently not utilized in the field of weapons but if utilized, it could result in weapons capable of adapting and acting based on the circumstances and environment it faces.

**Automatic defensive system:** Refers to automated weapons that are only capable of acting upon attacks from outside. These weapons are programmed to not initiate an attack unless an external threat is detected. Some examples include Terminal High Altitude Area Defense (THAAD), an automatic weapon designed to neutralize any incoming missiles.

**Automatic offensive system:** Refers to automatic weapons that are capable initiating attacks when permissions from the controller is granted. These machines are capable of using any weapons that it is equipped with and although not perfectly accurate, is capable of targeting only certain desired targets to attack from.

## Background Information

Artificial intelligence has reached new heights after a recent rapid technological advancement by developed countries. This eventually lead to it being utilized in many ways, including military usage. Artificial intelligence allows the automation of weapons, which is not only lethal and powerful in conflict but helps reduce the death of many soldiers. Some examples of these weapons include drones or jets that are unmanned and controlled via artificial intelligence. These technologies are capable of bringing huge damage to the opponent with seemingly low risk for the attacker.

However, there have been claims regarding the morality of using these technology. Since weaponization of artificial intelligence means the life of people is dependent on technology, the question of justifiability has been raised. Currently,

artificial intelligence equipped for military purposes are not at a perfect status, and could sometimes result in errors which could result in civilian casualties. Another major risk with the technology is the possibility of developed countries abusing this technology to gain dominance in international relationships.

There have been reports regarding the effectiveness of automated weapons in terms of their accuracy and lethality. However, the concerns associated with the technology along with the question of ethics must be considered before making any actions using a potentially devastating technology.

## Major Countries and Organizations Involved

**USA:** They are a major producer of these automated weapons. They are also a major exporter of these automated weapons. In their policy regarding the production and the usage of automated weapons, the following is stated: "Autonomous … weapons systems shall be designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force." They are the perfect example of regulations instead of banning technology.

**PAX:** Co-founder of the Campaign to Stop Killer Robots. Although they are open to the development of technology, they believe that the utilization of technology to lead more casualties will hinder the world's progress towards a more peaceful place and is advocating/promoting the ban of automatic weapons regardless of their accuracy or development.

**China, Russia, South Korea, EU:** These countries or union is a leader in automated weapons. There have been a report showing the substantial amount of investment these countries put in towards automated weapons. Experts stated that a invisible arms race between these nations are firing up to gain significant presence in international settings.

## Timeline of Events

| Date | Description of Event |
|---|---|
| 1936 | The first programmable computer invented - first AI |

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| February 1956 | USS Mississippi (BB-41) successfully tests a computer-guided missile that can correct variations of altitude and speed. |
| July 1958 | USS Vincennes stationed at the Persian gulf destroys an Iranian commercial airliner after false identifying it as a threat. 290 passengers were killed. |
| January 1994 | The US government began funding the development of a UAV that can transmit video footage in real-time via satellite link. By 2001, it has been upgraded to carry missiles - killer drones are invented. |
| November 2002 | The first Unmanned Combat Aerial Vehicle (UCAV) is deployed in Yemen during the US war against terrorism. |
| September 2006 | The Republic of Korea plans to install sentry robots in the demilitarized zone (DMZ) bordering Democratic People's Republic of Korea (DPRK). The sentries can track targets, but they need human authority to fire. |
| June 2017 | An annual 'AI for Good Global Summit' is hosted in Geneva, Switzerland by the International Telecommunication Union (ITU) with representatives from several nations. |
| November 2017 | The UN Convention on Certain Conventional Weapons (UN CCW) held their first meeting with the Group of Governmental Experts (GGE) to discuss questions related to the emergence of LAWs. |
| April 2018 | The UN CCW's GGE held a meeting for the second time in order to reiterate points discussed in 2017, with a focus on autonomous weapons. 26 countries have endorsed a ban on LAWs, including China, Austria and Colombia. Five countries (France, U.K, U.S.A, Russia, Israel) have explicitly rejected a ban on LAWs. |

## Relevant UN Treaties and Events

- International Humanitarian Law (IHL), 2005
- Study on Armed Unmanned Aerial Vehicles, 12 October 2015
- AI for Good Global Summit hosted in Geneva, 7 June 2017

- Role of science and technology in the context of international security and disarmament, 4 December 2017 (A/RES/72/28)
- Impact of rapid technological change on the achievement of the Sustainable Development Goals, 22 December 2017 (A/RES/72/242)

## Previous Attempts to solve the issue

The United Nations Secretary General, Antonio Guterras, mentioned that "machines with the power and discretion to take lives without human involvement are politically unacceptable, morally repugnant and should be prohibited by international law." Several conferences and meetings among member states have been held and are paramount for expressing different opinions. The issue of AIs has been discussed in meetings regarding LAWs, and discussed by groups such as the Group of Governmental Experts (GGE). Despite these several discussions, there has yet to be a comprehensive treaty or a resolution that directly addresses the topic of weaponizing AIs.

The annual summit held internationally in Geneva, Switzerland, 'The AI for Good Global Summit', started in 2017. It is co-hosted by the International Telecommunication Union (ITU), various UN agencies and other third-parties. The goal of this summit is to start dialogue on the issue of weaponizing AIs. Representatives of AI in business, government and civil societies from different countries gather to pitch projects and ways to advance the Sustainable Development Goals (SDGs) and to propose potential solutions to ongoing issues. This summit is ongoing and has yet to reach a project which is directly involved in solving this issue.

In November 2017, the UN Convention on Certain Conventional Weapons (CCW) had their first meeting in Geneva with AI researchers from member states. Due to public pressure, the group has met several times again after the first meeting to discuss this issue, and is an ongoing project of the UN. Although they are working towards this issue through fruitful discussions, it is heavily criticized for its slow actions in comparison to rapid development of AIs. Countries have made this meeting legally binding, only allowing member states to propose recommendations that other nations may adopt.

## Possible Solutions

The most necessary action that needs to be taken to resolve the issue is the verification on the safety of these weapons. These can be done through several testings or qualification tests that would examine things like: the accuracy of the target detecting system, frequency of error or malfunction, functionality in extreme conditions or safety of weapons equipped.

One approach to tackle the issue is to ban automatic weapons. As many organizations fear, these weapons are capable of devastating damage which could be detrimental especially towards developing countries. To tackle the issue at hand, it could be argued that an international agreement to ban the entirety of automated weapons can be established to ensure the safety of the world.

Another approach is to restrict the usage of automated weapons. These would include regulations regarding the location of the usage, the specification of these weapons, capabilities of these weapons and transparency on the usage of these technology. This approach is definitely more time consuming and the member nations of the united nations are expected to have contrasting views regarding this topic. However, considering the potential benefits of these technologies, it may be the best approach.

## Bibliography

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