

Publication state: Japan
ISSN: 2423-8775

Publisher: J-INSTITUTE
Website: <http://www.j-institute.jp>

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Peer reviewer
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<http://dx.doi.org/10.22471/military.2018.3.1.14>

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A Study on the Possibility of TERRORISM by AI and Its Countermeasures

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Abstract

It is argued that the importance of artificial intelligence has a lot of social consensus, and that efforts to devise deeper artificial intelligence and to solve various problems are actively made. In Korea, there is a growing interest in using artificial intelligence across a wide range of societal spheres, and discussions about the future of artificial intelligence and robots in our society are becoming more active. The Korean government has also announced plans to strategically nurture artificial intelligence, which is the underlying technology of future new industries.

Terrorism is one of the most serious problems facing the international community today. The possibility of terrorism, which exploits artificial intelligence and a combination of drone, is also realizing, and terrorists may attack drones and artificial intelligence robots to attack the most crowded places.

This paper is intended to examine the possibility of future terrorism using artificial intelligence. To do this, we analyze the concept and development of artificial intelligence, the prospect of artificial intelligence technology development, the possibility of terrorism that exploited artificial intelligence, and the strategies to cope with it, and draw conclusions.

Terrorist aspects and terrorist environments are gradually diversifying in response to changes in domestic and overseas security environments. In addition, the development of artificial intelligence technology and the possibility of exploitation of artificial intelligence, terrorism and crime related by AI are also required to be prepared.

As a result, it is required to prevent abuse and exploitation of artificial intelligence as well as various countermeasures against terrorism and crime related to AI.

In conclusion, artificial intelligence technology should be developed to improve the quality of human life and to prevent and overcome threats such as terrorism that threaten human life and freedom, preparing international, technological, legislative and security measures.

[Keywords] AI, Terrorism, Killer Robots, Drone, Unmanned Vehicle

1. Introduction

It is argued that the importance of artificial intelligence has a lot of social consensus, and that efforts to devise deeper artificial intelligence and to solve various problems are actively made[1]. In Korea, there is a growing interest in using artificial intelligence across a wide range of societal spheres, and discussions

about the future of artificial intelligence and robots in our society are becoming more active.

The Korean government has also announced plans to strategically nurture artificial intelligence, which is the underlying technology of future new industries[2].

Terrorism is one of the most serious problems facing the international community today.

Today, the threat of terrorism is a catastrophic event that takes away the lives and property of millions of people in an instant, and the purpose and aspects of terrorism are becoming more and more diverse.

The possibility of terrorism, which exploits artificial intelligence and a combination of drone, is also realizing, and terrorists may attack drones and artificial intelligence robots to attack the most crowded places[3].

This paper is intended to examine the possibility of future terrorism using artificial intelligence. To do this, we analyze the concept and development of artificial intelligence, the prospect of artificial intelligence technology development, the possibility of terrorism that exploited artificial intelligence, and the strategies to cope with it, and draw conclusions.

2. Theoretical Backgrounds of AI

2.1. Concepts of AI

It was the Dartmouth Conference in 1956 that first appeared in the word artificial intelligence. The word artificial intelligence was first used in discussions about the machines that mathematics, psychology, and computer science work together. However, the direction of pursuing artificial intelligence by academic discipline or by individual scholars was different, and they did not give consensus on artificial intelligence[4].

Artificial intelligence in dictionary meaning means artificial intelligence created by a human being or intelligent entity or system. [4] Artificial intelligence means a device that allows a computer to think like a human being or to take the place of human thought processes or intellectual activities[5].

Artificial intelligence refers to the ability of a computer to imitate human intelligence. Artificial intelligence, on the other hand, is about letting computers do what people are doing.

2.2. Trends in development of technologies of AI

Since the 1980s, thanks to the development of semiconductor technology, miniaturization, high

speed, and large capacity of computers have been made, hardware basis of artificial intelligence has been established. Based on this, artificial intelligence became realistic as software technology converged with various fields such as machine learning and artificial neural network developed.

Developed countries and major global corporations are paying attention to the application of artificial intelligence technology as the promising technology of next generation of IT and they are trying to commercialize them in various fields[6].

The robots that are currently competitive in the world are drones and unmanned vehicles. The drones have already become popular enough to become popular, and unmanned vehicles are expected to be commercialized soon.

The development of artificial intelligence technology has developed worldwide over the past several decades. Recent advances in machine learning and deep learning have led to a strong interest in artificial intelligence, which has led to the emergence of supercomputers with superior capabilities than humans and the universalization of robots that replace human work[7].

3. Possibilities of Terrorist Attacks by AI

3.1. Security environment surrounding Korea

In our special security environment, more than 90% of the terror attacks we have been involved in were terrorist attacks by North Korea. The possibility of terrorism using cyber terrorist attacks and priestly explosives of North Korean defectors has also been raised.

The Internet is a civilization that brings together all the knowledge on the Internet to bring about explosive expansion of information, but it cannot deny that it is open to anyone, so that it can be planned and executed based on the information of the Internet[8].

Terrorist attacks in the age of artificial intelligence is expected to result in various types of terrorist attacks in a new aspect that exploits

artificial intelligence. Biological attacks by terrorists are also expected[9].

3.2. Development of AI technology and future of war

Currently, about 40 major countries such as the United States are working on the development of unmanned weapons using artificial intelligence ahead of the opening of the era of robotic war. Computer experts, computers, and the Internet alone can destroy any infrastructure in a certain city[10].

Now, countries around the world are competing to develop military robots equipped with artificial intelligence. Military robots are now widely used for detecting and dismantling explosives. The United States uses drones engaged in surveillance and reconnaissance activities in certain areas[10].

Robots are being put into the task of disturbing the electronic network or guiding missile targets. Major countries, including the United States, are known to deploy unmanned weapons such as killer robots and drones that do not require human control in the next 10 to 20 years.

The United States is a leader in artificial intelligence unmanned weapons development. The drones developed by the United States are emerging as the core of US military power and military operations. The United States has said it has spent \$ 5.3 billion on the federal budget for the year of 2015 alone to develop an unmanned weapons system[10].

Following the United States, Britain, China and Israel are spurring the development of unmanned weapons. Countries that do not suffer military threats like the Netherlands have also entered the competition to develop unmanned weapons. Russia has announced it will complete its robot development program, which will cover five missile bases by 2020[10].

Unmanned weapon competition does not stop here. Biomolecular weapons are being developed that use biotechnology to induce only those with certain genes to become infected and die. Rather than killing humans, researchers are actively researching biological weapons that can eventually kill specific racial or ethnic groups by

spreading viruses that kill reproductive capabilities. Non-fatal biological weapons are also available, such as making blinds for a period of time.

4. Counterstrategies Against Terrorist Attacks by AI

4.1. Clarification of authorities and responsibilities of AI

First of all, it is needed to clarify the authority and responsibility of artificial intelligence. In order to solve problems caused by malfunction, abuse and abuse of artificial intelligence, it is necessary to clarify artificial intelligence authority setting and the matter of responsibility for results.

Basically, artificial intelligence should not be the subject of ethical judgment without human intervention. Under these standards, the human subject who is determined to be able to do so should be responsible. Also, careful design will be needed from the developmental stage so that artificial intelligence is not the sole subject of ethical judgment but only the functional role of supporting it[11].

As technology develops, the degree of complexity and autonomy increases, and as the range of application becomes wider, the degree to which human beings can control artificial intelligence will gradually decrease, and the social intelligence autonomous decision- Threats to safety can be increased. In order to prevent this, we should study not only the issue of authorization of artificial intelligence but also the legal basis of responsibility matter.

4.2. Strict limitation on development of killer robots in the level of international conventions

The UN Convention on Conventional Weapons deals with how to prevent killer robots as an annual meeting after 2014. The UNCCW has a policy of regulating and guiding human beings to go the right way in accordance with the development of AI technology. In July, 2015, a letter from academics, philosophers, and AI experts was released on the website of Future of Life Institute, arguing that it is a matter of time

for terrorists, dictators, and warlords to get automated weapons using artificial intelligence technology through the black market once they are developed, therefore, development of those kinds of weapons must be strictly regulated by international agreements[12].

4.3. Maintenance of technical ability against terrorist attacks by AI

Killer robots are subject to careful review, development and production. Considering the history of mankind, the appearance of military robots is becoming a reality that cannot be prevented in the future.

If the possession of military robots is realized by other nations, terrorist attacks will have to have artificial functional skills that surpass terrorists. The war between a country that has a military robot and a country that does not have a military robot has already been decided. Therefore, various applications of artificial intelligent robots should be considered[13].

4.4. Enactment of legislation against abuse of AI technologies

In order to prevent abuse and misuse of artificial intelligence technology, social debate, consensus, legal and institutional research on strict legal apparatus and punishment in case of violation should be prepared. There is also a need to preemptively detect and cope with misuse and malfunctions, and it is also needed to develop stable and reliable artificial intelligence devices.

The institutional device is provided to basically equip artificial intelligence with technology that protects personal privacy and prevents public control by adjusting utilization range of artificial intelligence technology, or to give responsibility and duty of company management related to artificial intelligence to protect the users' interests[11].

5. Conclusions

Since the end of the Cold War, terrorism has attracted attention as a major international issue that threatens international peace, including human rights and poverty. Terrorist aspects and terrorist environments are also

gradually diversifying in response to changes in domestic and overseas security environments. In addition, the development of artificial intelligence technology and the possibility of exploitation of artificial intelligence, terrorism and crime related by AI are also required to be prepared.

As a result, it is required to prevent abuse and exploitation of artificial intelligence as well as various countermeasures against terrorism and crime related to AI.

The prospects for the evolution of artificial intelligence and human life are mixed. The evolution of artificial intelligence improves quality of life or productivity, but if technology becomes increasingly sophisticated and automated, it becomes inaccessible, or if it is exploited by a group of specialists, serious social and ethical problems can arise.

In conclusion, artificial intelligence technology should be developed to improve the quality of human life and to prevent and overcome threats such as terrorism that threaten human life and freedom, preparing international, technological, legislative and security measures.

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