



Arrangements of Artificial Intelligence in Criminal Law in Indonesia

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Abstract

Along with the development of the era technology is developing faster. In the era of automation and interconnectivity, Artificial Intelligence (AI) technology has now developed. Although AI has been very developed and has a broad impact on society, in its development until now there has been no special regulation that regulates the technology. This is feared if there is an error or omission caused by AI that results in the community as a victim. The community currently does not have legal protection and has not received a legal certainty as a result of the AI technology. This study aims to analyze how AI technology is responsible in a positive legal perspective in Indonesia. This research is a normative research with a conceptual approach, this research uses the theory of legal protection and legal certainty in order to be able to answer the problem of the importance of a special legislation related to criminal acts in AI technology. In its development, the law is expected to always be able to answer changes and challenges of society in order to solve problems that will arise in the future.

Keywords: *Legal Vacuum; Crime; Artificial Intelligence*

Preliminary

Technology is one of the tangible forms that humans have developed and civilized, with the presence of civilization technology and human behavior has changed to become more efficient and easier. Humans always try to create something that can facilitate their activities, this is what encourages the development of technology which has produced many tools that can facilitate human activities, even replacing the role of humans in a particular function. Technology has an important role in this era of globalization, where technology has become an inseparable part of everyday life. One form of development of the technology itself is the birth of artificial intelligence or artificial intelligence *Artificial Intelligence (A.I.)*. The term may remind us of the greatness of robots or systems which are often identified with the ability to behave like humans.

AI is not always in the form of a robot like what we usually see in science fiction films. AI is often in the form of computers, devices, even without form. AI technology was created to understand and provide solutions to problems more quickly and effectively. In addition to this, AI technology is expected to be able to complete human work more easily and give maximum results.

The use of AI technology is arguably one of the important agenda items accompanied by the development of the Industrial revolution 4.0 where the key to the revolution lies in Big Data and AI. This artificial intelligence can greatly assist many business organizations around the world in controlling enterprise data and using machine learning to understand business trends is common. The development of AI is becoming more rapid as the number of internet users increases. It is recorded that 196.7 million or more than 70% of Indonesia's population have become internet access users in the second quarter of 2020, which makes AI data growing.¹

Rapid advances in aspects of artificial intelligence or *Artificial Intelligence* this could increase the risk that hackers or irresponsible users could use AI technology to mount an automated attack, such as causing a driverless car crash or turning a commercial drone into a weapon capable of immobilizing its target. Research published by 25 technical and public policy researchers from universities Cambridge, Oxford dan Yale together with privacy and military experts, warned against the abuse of AI by 'rogue' countries, criminals and a militant. The researchers say that the misuse of AI poses a potential threat to digital, physical and political security by enabling a highly efficient targeted, large-scale attack. This study focuses on the development of AI in the last five years.²

Cyber attacks using artificial intelligence (AI) are predicted to be even more terrifying. Chairman of the Indonesian Cyber Research Institute CISSReC (*Communication & Information System Security Research Center*) Pratama Persadha says hackers are taking advantage of AI so that *malware*, *ransomware*, *virus*, until *trojan* can continue to develop and continue to improve its weaknesses to fight antivirus. The development of AI is indeed very encouraging, it has even become a solution in various places. However, we must also anticipate that AI is used to develop more sophisticated cyber attack tools, a parasite in cyberspace that can think like humans. According to Pratama, the trend of hoaxes will become more sophisticated. Especially with deepfake technology that can create fake videos that look like real ones. With deepfakes, fake videos can be created by manipulating a person's face and voice. In that video a person can be made to say something he doesn't say, all of this was developed using artificial intelligence.³

Although its development has only been felt massively in the past few years, history has proven that artificial intelligence has been the research of experts long before the internet developed and touched all lines of our lives as it is today, with the development of technology and computer systems that are very progressive and massive, not only can help human roles, but has also slowly positioned itself to replace human roles in certain jobs. With the development of information technology, it is possible to give birth to new criminal acts, the difference is that these crimes are carried out using virtual media or virtual media and in committing these crimes use technology as a tool. Criminal acts in the form of virtual media or virtual worlds are called *cyber crime*.

Technological development *Artificial Intelligence* (AI) encourage decision makers to pay attention to the impact and regulatory linkages. Aspects of AI development in various sectors also present complex regulatory challenges. although AI intelligence can have a broad impact on society, but related to legal accountability, the legal system in Indonesia itself has not explicitly regulated this matter.

Based on the above background, the author raises the formulation of the problem about how the form of accountability, especially in criminal law, results from the void of legal regulations against artificial intelligence or artificial intelligence. *Artificial Intelligence* (AI) in Indonesia?

¹ First Media. "Artificial Intelligence - Dampak, Tantangan dan Manfaat dalam Bisnis". First Media, <https://www.firstmedia.com/article/artificial-intelligence-dampak-tantangan-dan-manfaat-dalam-bisnis>. (diakses 20 Juli 2021).

² Hafit Yudi Suprobo, "Artificial Intelligence Mampu Timbulkan Bencana Jika Disalahgunakan", *Warta Ekonomi*, <https://www.wartaekonomi.co.id/read171308/artificial-intelligence-mampu-timbulkan-bencana-jika-disalahgunakan>, (Diakses 21 Juli 2021).

³ CNN Indonesia. "Serangan Siber 2020 Makin Ngeri, Pakai Kecerdasan Buatan". <https://www.cnnindonesia.com/teknologi/20191231140316-185-461320/serangan-siber-2020-makin-neri-pakai-kecerdasan-buatan>. (Diakses 10 Agustus 2021).

Research Method

This type of research is normative juridical. Normative legal research (*normative law research*) using studies related to legal products. The approach used in this research is the approach to related legislation and conceptual approach. The technique of collecting legal materials is carried out by searching for legal materials on the issues to be raised. Data analysis was carried out using a deductive method, namely drawing conclusions that are universal, general, on the concrete problems faced, in the context of this research, the author will explain and analyze the importance of a regulation that regulates artificial intelligence or *Artificial Intelligence* (AI) based on the general concept first, after that the author uses a theory related to legal vacuum, which the author will use as an analytical knife in looking at the issue of accountability for artificial intelligence or *Artificial Intelligence* (AI) due to a legal vacuum, especially criminal law in Indonesia.

Discussion

1.1 Artificial Intelligence Technology or *Artificial Intelligence* (AI)

The term technology comes from the Greek, namely *Technologia* according to Webster Dictionary means systematic treatment or handling something systematically, while *techne* as the basis for the word technology means skill or expertise, skills and knowledge.⁴ While the word Intelligence comes from the Latin *intellegio* which means I understand, so the basis of Intelligence is the ability to understand and take action.⁵ So artificial intelligence (AI) technology is a field of computer science that has an important role in the present and future era.

Role *Artificial Intelligence* (AI) or artificial intelligence has experienced rapid development. In Indonesia, AI technology is developed by all technology-based startups that offer convenience for the community in fulfilling their daily needs. AI that has grown over the years has made many big changes in all sectors. This field has grown very rapidly in the last 20 years along with the growing need for smart devices in industry, automotive and households.

AI has 3 categories, namely: weak AI or Artificial Narrow Intelligence (ANI) also known as narrow AI is an AI system designed and trained for a specific task. Virtual personal assistants, like Apple's Siri, are a weak form of AI. Next up is the strong AI form or Artificial General Intelligence (AGI), also known as general artificial intelligence is an AI system with general human cognitive abilities. When presented with a specific task, powerful AI systems can find solutions without human intervention.⁶ Lastly, is the form of Artificial Super Intelligence (ASI), which is the form of AI with the most superior capabilities among other forms of AI. Because in addition to having the ability to surpass humans, machines in the form of breast milk are programmed to be able to think and will without human control. Until now, researchers are still in the process of perfecting the system from the AGI form so that it can be applied to real life. While the form of ASI is still a concept in the form of a hypothesis about the ability of technology in the future.⁷

⁴ Nana Sudjana dan Ahmad Rifai. *Teknologi Pengajaran*. (Bandung: Sinar Baru, 1989). h. 183.

⁵ Widodo Budiharto dan Derwin Suhartono. "Artificial Intelligence Konsep dan Penerapannya". (Yogyakarta: Penerbit Andi, 2014). h. 2-3.

⁶ Bernhart Farris. "Mengenal Artificial Intelligence dan Cara Kerjanya". CNBC Indonesia. <https://www.cnbcindonesia.com/tech/20190513130056-37-72069/mengenal-artificial-intelligence-dan-cara-kerjanya>. (Diakses 10 Agustus 2021).

⁷ Marsya Iffah Erisar Raib. "Penerapan Teknologi Artificial Intelligence Sebagai Implikasi Dari Timbulnya Fenomena Imperialisme Digital". <https://fh.unpad.ac.id/penerapan-teknologi-artificial-intelligence-sebagai-implikasi-dari-timbulnya-fenomena-imperialisme-digital/>. (Diakses 10 Agustus 2021).

Artificial Intelligence not only in the form of robots that can resemble humans. In general, there are 3 types of technology ology which is classified into a *Artificial Intelligence*, that is.:⁸

a. *Neural AI*

The first type was very popular among computer scientists in the 1980s. Neural AI is a knowledge system that is not represented in the form of symbols, but rather in the form of artificial neurons such as a well-reconstructed brain. Then, the knowledge that has been collected will be broken down into smaller parts and will later be linked into a group. This approach is known as the bottom-up method and works from the bottom. So the nervous system must be trained so that it can accumulate more experiences and knowledge.

b. *Neural Network*

The second type is Neural Network, is a type of system that is organized into a layer that is interconnected with each other through simulation. The input here is the top layer which has the same function as the sensor. There are at least two or more systems in a larger set of systems arranged hierarchically. This layer will send and classify information through the connection.

c. *Symbol-Manipulating AI*

The last type, is an AI system that works with abstract symbols. This type is included in the design that requires a lot of experimentation or experimentation. The essence of the experimental stage is to test the reconstructed human intelligence system at a more structured and logical level. Then the information obtained will work with symbols which will later be read by the developer (developer), where the connections formed are abstract and the conclusions are logical.

Today's AI technology has covered a fairly large field, ranging from the most general to the specialized. From Learning or Perception to playing chess, proving mathematical theory, writing poetry, driving a car and diagnosing disease. This technology has many benefits and advantages that can be obtained from the use of *Artificial Intelligence* in every activity carried out by humans, including the following:

a. To automate learning iteratively through data

AI can automate to handle more complex, high-volume tasks, and is computerized reliably without experiencing a burnout. The process of AI technology will be very different from the automation process carried out on hardware to drive robots.

b. To add intelligence

In most cases, AI is not sold separately but rather developed in a product to increase the functionality and credibility of the device. An example of this application is a virtual assistant to help schedule and fulfill every human need according to its features.

c. Adaptable through progressive algorithm

For AI itself, it has found the structure and regularity of the processed data so as to produce more skilled and intelligent algorithms. So with the help of programming languages made by developers, *Artificial Intelligence* able to teach themselves the products that have been recommended online.

⁸Andy Nugroho. "Mengenal Sejarah dan Jenis-Jenis Kecerdasan Buatan". Qwords, <https://qwords.com/blog/kecerdasan-buatan/>. (Diakses 22 Agustus 2021).

d. AI can analyze more data

The data analysis process can also be done better using a neural network that has many hidden layers. With the help of big data, it is able to store and manage more and faster data. The more data that is inputted, the more accurate the learning model being trained will be.

e. Has a more optimal accuracy

The last benefit is having more optimal accuracy with the help of deep learning. So, the role of data will be very crucial and decisive in creating a competitive advantage.

AI broadly offers the prospect of increasing productivity and accelerating innovation in business and other fields. AI also enables society to respond to the toughest and most difficult challenges of disease, hunger, climate control and natural disasters. A series of positive results from the use of AI in various fields, both business and health, has certainly become a driving force for further use of AI in things that are useful for humans. Therefore, the use of AI for the legal field, especially in Indonesian national law, must start now, if we don't want to see our law getting left behind from technological progress and society.

1.2 Regulation of Artificial Intelligence or Artificial Intelligence (AI) in Indonesia

Artificial intelligence technology (AI) is man-made which of course still has a few flaws, even if only a little. *Artificial Intelligence* itself has disadvantages such as not having common sense and limited intelligence. The purpose of not having a common sense is that AI only processes data and decides something according to the data collected, in contrast to humans who still consider instincts in making decisions. In addition, there is information that can only be processed and understood by humans. So if later there is a robot that is shaped like a human, the robot will still not be able to have human instincts. This is related to the second loss or weakness, namely limited intelligence.

Artificial intelligence which will be used in a technological tool, but the tool is only able to do work according to the AI system that is inserted into it. For example, a system designed specifically to recognize sounds in Indonesian will not be able to recognize sounds in Korean. Apart from that *Malware* that apply AI has not been specifically regulated in the Information and Electronics Law or abbreviated as UU ITE. The regulation does not optimally regulate law enforcement for cybercrimes in particular *Malware* AI is applied in it, so that there has not been maximum preventive and repressive law enforcement.

Malware has various types and the development of *Malware* types is increasingly diverse, in these various types *Malware* has different names. Broadly speaking, *Malware's* modus operandi is summarized into 4 cyber incidents. The *malware* in these 4 cyber incidents was used to:⁹

a. Access Denied

Malware in the form of a virus, perpetrators are also used to make DDoS attacks by spreading files containing viruses on various internet sites with social engineering that makes the victim download the file and make the computer infected with the virus. When the computer has been infected with the DDoS virus, the virus will automatically carry out the DDoS attack protocol.¹⁰

⁹ Organisation for Economic Co-Operation and Development. "Malicious Software (Malware): A Security Threat to The Internet Economy". (Makalah Disampaikan Pada OECD Ministerial Meeting On the Future of the Internet Economy, Seoul, South Korea, 2008).

¹⁰ Donovan Typhano Rachmadie dan Supanto. "Regulasi Penyimpangan Artificial Intelligence Pada Tindak Pidana Malware Berdasarkan Undang-Undang Republik Indonesia Nomor 19 Tahun 2016". *Recidive Recidive* Vol 9 No 2 (2020):131.

b. Extortion

There are several *Malware* which is designed to encrypt the victim's data so that the victim does not have access to reuse the data. To get it back, the perpetrator will usually ask the victim to pay a ransom in the form of a "key" to encrypt the victim's data again. There are several perpetrators who take advantage of the victim's panic so that the perpetrators carry out more extortion which drains the victim's money. *Malware* which has this modus operandi is *Ransomware*, *Lockscreen*, *Ransomware WannaCry* until *Ransomware palsu* and various names of ransomware that have had different names due to its development.

c. Espionage

The espionage carried out starts from accessing the computer screen, webcam (camera on the computer) to recording keyboard typing (*keylogger*) This activity can also be referred to as Spyware, program *Malware* capable of spying on the activities of a person's computer user. Perpetrators have breached access without the permission of the computer owner, so this violates the law because it makes the victim feel uncomfortable and has the potential to misuse the information the victim has obtained. Usually, perpetrators sell victim information to advertising service providers so that they can display relevant ads. The worst condition is that the perpetrator can control the computer remotely because they already have access to the computer.

d. Information Theft

Information theft oleh *Malware* is the most common attack of the three modus operandi above because of the way it works *malware* yang selalu bermuara kepada pencurian informasi. Pelaku yang menerapkan *malware* in his attack had planned his target in advance to determine the type *malware* what to use. Technological developments that are now entering the industrial revolution 4.0 involve a lot of data in it, all-digital access is a popular target by users *cyber threat actor* to attack him. The theft of personal data information is very popular in recent years, as perpetrators can use the data for various cyber incidents.

If you look at the magnitude of the capabilities that can be done by AI, even so, there are still gaps or errors in this technology in assisting human daily activities. Based on anticipating the occurrence of criminal acts as a result of *malware* which have not been grammatically regulated in Indonesian laws and regulations. Although there are various criminal rules outside the ITE Law which are capable of ensnaring these criminal acts because the ITE Law is the newest and most specific regulation to deal with cybercrimes, there is nothing wrong if AI is started to be taken into account to have limitations or create a legal products and legislation that can be an answer to the community's problems.

In order to answer the challenges of today's era, especially in the industrial revolution 4.0 that is happening in the world and in Indonesia, Indonesia must quickly anticipate the development of AI technology by making a legal product, in this case the law. The work of making laws has two aspects, namely firstly, legislators only stipulate general regulations, considerations on concrete matters are left to judges and secondly, legislators are always left behind with social events that arise later in the law. society, the judges often add to the law.

Legal construction should not be carried out arbitrarily, it must be based on the legal understanding contained in the relevant law. Legal construction should not be outside the positive material system. In this legal construction there are three forms, namely:¹¹

¹¹ Gamal Abdul Nasir. Kekosongan Hukum & Percepatan Perkembangan Masyarakat. Jurnal Hukum Replik Jurnal Hukum Replik Vol 5 No 2 (2017):177.

- a. The analogy of interpretation of a legal regulation by giving a figure of speech to the words is in accordance with the legal principle, so that an actual event cannot be included, then considered according to the sound of the regulation. Legal analogy in principle applies to civil matters (private), especially in private law (*verbinterissenrecht*), whereas in public law no analogy may be used.
- b. Legal refinement treats the law in such a way (subtly) as if no one is to blame. Legal refinement is by narrowing down the validity of an article which is the opposite of a legal analogy. The nature of legal refinement is not looking for faults from the parties, and if one party is blamed, tension will arise.
- c. *Argumentum a contrario* interpretation of the law based on or denial means the opposite of understanding between the problem at hand and the question regulated in an article in the law.

To anticipate things that are not wanted in the future, then at least there are several things that need to be considered, one of which is the formation of legislation related to AI. Talking about legal liability means talking about the capacity of legal subjects to be responsible. Explicitly, although it can carry out actions that are included as legal actions, AI cannot be defined as legal subjects. For this reason, an alternative is needed by still connecting the actions of AI and legal subjects who are the owners of the AI.

As stated above, law is positioned as a tool to achieve state goals, which practically according to Sunaryati Hartono, legal politics is a tool or means and steps that can be used by the government to create a national legal system in order to achieve the ideals of the nation and state goals. So when referring to this opinion it is clear that the law must be able to create what this nation aspires to, but seeing the reality that is currently happening there are still many shortcomings that need to be addressed regarding the formation of legislation.

Closing

Artificial Intelligence is an intelligence system that is implanted by human assistance into a special technology to assist various existing activities. After all, the use and use of AI in everyday life is to do things that humans can actually do. Legal ability in dealing with and anticipating technological developments will have an important meaning, especially in providing a legal basis for new technologies for which there is no legal regulation, in this case by utilizing artificial intelligence technology that has implemented an expert system. Because if not, the law will often and always be left behind when compared to technological developments that occur in society.

In the end, the utilization and use of technology itself must be beneficial for human life and life, where the law can play its role in the speed of technological development and change, where if there is no system capable of predicting what humans will need in the future related to technological developments, then we will not be ready to accept the negative effects of technological progress itself, as stated above. To anticipate this, legal reform must also be able to adapt to technological developments. However, the use of AI systems must comply with all applicable laws for human operators.

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