



Artificial Intelligence: The Emerging Concept and Ethical and Legal implications DR. ANAND PALIWAL, SNEHA SINGH

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Introduction

One question is usually and more frequently being asked; what sets a 'Human' apart from rest of the Mammalia and Animal Kingdom. And as many are the lines of thinking, equally varied are the answers. However, all of them boil down to one final answer: it is the presence of greater degree of "cognitive" functions in humans such as the acts of "speech", "advanced learning" and "problem solving" i.e. depiction of intelligence which highlights the difference of human beings from other beings.¹ Thus, no life form is deprived of some degree of "cognitive" functions. Humans possess this intelligence naturally. However, the question arises that can this intelligence be mimicked artificially. Here, the answer lies in the concept of Artificial Intelligence (AI).

Artificial intelligence (AI), which is also named as Machine intelligence (MI), is the intelligence that is displayed by machines, in contrast with the natural intelligence (NI) displayed by humans and other animals. In computer science AI research is defined as the study of "intelligent agents", which includes any device that perceives its environment and takes actions that maximize its chance of success at some goal.² Simply stated one can say that "artificial intelligence" means when a machine imitates the "cognitive" functions that humans associate with other human minds and in some cases animals which have been mentioned in the discussion above. It is about designing machines which they can think.

If we talk about the utility of Artificial Intelligence, we discover that there are multidimensional and multifarious roles and tasks that can be associated with AI. Now, the researchers are also aiming that an emotional aspect or 'Empathy' be introduced into them. This is an issue raised in a new Netflix Series 'Maniac' where Empathy is introduced in the AI 'GRTA' as a Safety Net for the patients and series follows the situations arising due to or lack thereof of this empathetic factor. Firstly, should we be concerned about this issue at all and if yes, then how will it affect our lives?

Another issue is whether a machine can replace human in all aspects of work life, if yes, why shouldn't reservations for excessive development of AI be raised on the cost of human jobs. All our information, which is floating online, is vulnerable as the same is handled by huge computer brains, which can be easily mishandled. AI platforms like Google, Yahoo Search, Facebook, etc. takes in huge amounts of information from our activities online and intrusively provide us with shopping options, loan advertisements, which forces us to feel that there is no privacy left in the world. This discussion about AI's role as innovator versus dictator is the key issue in this discussion.

Aims and Objectives

The purpose of this paper is to understand basics of Artificial Intelligence, its history and the legal concerns relating to it. The aim is also to discuss the underlying debate of decades as to the utility of Artificial Intelligence versus the safety concerns. It is a relevant discussion in view of thriving AI business as in 2018, the global AI market is expected to be worth approximately 7.35 billion U.S. dollars³ and issues like Robot Citizenship in view of development of Intelligent Robot 'Sophia'. The objective is to deduce as to what must be the demarcating line where the enhancement of intelligence, autonomy and involvement of AI should be halted, so that overall well being of the human beings remains the prime concern of AI development.

Scope

The scope of this paper is confined to study in brief about Artificial Intelligence and not go into in-depth discussion of scientific methods involved and development of this technique through the years. This study will concentrate on impact of Artificial Intelligence on social and economic aspects of human lives and trace the truth behind concerns of AI dominance on human beings and if such concern exists legal implication of the same.

History of Artificial Intelligence

The idea of building a machine to perform useful reasoning may have begun with Ramon Lull (c. 1300 CE). However, Artificial intelligence was founded as an academic discipline in 1956 in Dartmouth College, and in the years since has experienced several waves of optimism and corresponding disappointments and again reviving with new approaches, success and renewed funding.⁴

In the early 1980s, an AI Program 'expert systems', which was a form of AI program that simulated the knowledge and analytical skills of one or more human experts, was adopted. This met with huge commercial success and this was the reason for revival of AI research and by 1985 the market for AI had reached over a billion dollars.⁵ At the same time, Japan's fifth generation computer project inspired the U.S and British governments to restore funding for academic research. However, beginning with the collapse of the Lisp Machine market in 1987, AI once again fell into disrepute, and a second, longer-lasting hiatus began.⁶

In the late 1990s and early 21st century, AI began to be used for logistics, data mining, medical diagnosis and other areas. The success was due to increasing computational power, greater emphasis on solving specific problems, new ties between AI and other fields and a commitment by researchers to mathematical methods—and scientific standards. Deep Blue, which was capable of evaluating up to 200 million positions a second, became the first supercomputer chess-playing system to beat a reigning world chess champion, Gary Kasparov on 11 May, 1997.⁷ In 2011, IBM's Watson took on the human brain on US quiz show Jeopardy. This was a far greater challenge for the machine than chess as Watson had to answer riddles and complex questions. Watson vanquished its opposition and it was hailed as a triumph for AI.⁸ After this several AI computers have marked their place in gaming world.

However, a serious turn-out of the AI utility came in 2015, which was called a landmark year for artificial intelligence by Bloomberg's Jack Clark, with the number of software projects that use AI within Google increased from a "sporadic usage" in 2012 to more than 2,700 projects.⁹

Today artificial intelligence (AI) is progressing rapidly and we have SIRI to self-driving cars. While science fiction often portrays AI as robots with human-like characteristics, AI can encompass anything from Google's search algorithms to IBM's Watson to Facebook's image describer to autonomous weapons. From Google's billion-dollar investment in driverless cars, to Skype's launch of real-time voice translation, intelligent machines were now becoming an everyday reality that would change all of our lives.¹⁰ It is proposed that virtual assistants such as Amazon's Alexa and Google Home or programs like Woebots are going to analyse the mental health conditions, the subsistence of marriage and take part in different forms of counselling¹¹. The AI is thus going to judge the functional relationships and interrupt and argument to resolve. AI will provide relationship advice and suggest measures to bridge the gap in emotional intelligence and communication styles. With all these advancements proposed for AI where it will be going into the perceptions of Human Relationship, it has become very important to see what kind of legal and ethical implications will arise so accordingly they be made responsible for the same also.

Utility v. Concerns: Pros and Cons of Artificial Intelligence

Artificial intelligence today is properly known as narrow AI (or weak AI), in that it is designed to perform a narrow task (e.g. only facial recognition or only Internet searches or only driving a car). However, the long-term goal of many researchers is to create general AI (AGI or strong AI). While narrow AI may outperform humans at whatever its specific task is, like playing chess or solving equations, AGI would outperform humans at nearly every cognitive task.¹² This is only an aim, however it raises questions like is it necessary for computers to be made more intelligent and is artificial general intelligence even possible or is it inevitable?

Most of the researchers still do not agree with the fact the AI can become a sentient being as it is projected through medium of Media as AI has still not been able to gain even the 10% of Human Brain and Cognitive Function. However, it is the case if the same computing matter is made available as our brains. However, AI is not bound by this limitation. First, with advent of super computers and then interconnection of AI over Internet, the computing and brainpower of AI has become manifold our brainpower.

From the discussion above it is clear that concerns with reference to artificial intelligence must be dealt with under the heads off Moral, Ethical, Safety and Legal implications.

Most researchers think that it is not possible in the coming few years for the AI to become sentient being. The task of increasing the AI intelligence is in the hands of humans at present. Concern is not with the process of increasing this intelligence by humans themselves in controlled manner. However the task of

increasing intelligence is also a cognitive task and as the cognitive powers of AI are enhanced, the concerns are that if AI starts to increase its intelligence in a cascading manner in one step after another, then as pointed by I.J. Good in 1965, an intelligence explosion may be triggered leaving human intellect far behind.

However, these Safety Implications of machines choosing to behave in a consciously malevolent manner are a matter of somewhat distant future. Along with the safety implications, there are ethical implications towards which we need to turn our attention at present and these are with reference to misaligned goals of AI, i.e. AI not behaving in a manner than what is desired out of them. Here two situations need to be considered:¹³

1. The AI is programmed to do something devastating: Autonomous weapons are artificial intelligence systems that are programmed to kill. To avoid being thwarted by the enemy, these weapons would be designed to be extremely difficult to simply “turn off,” so humans could plausibly lose control of such a situation. And with increasing arms race, mass casualties can also be caused. And this apprehension is not misplaced as the pioneers of technology, like Stephen Hawking, Elon Musk and Steve Wozniak have touted big fears about the implications of a future in which artificial intelligence plays a bigger role, and have called out for a ban on offensive autonomous weapons.¹⁴
2. The AI is programmed to do something beneficial, but it develops a destructive method for achieving its goal: This can happen whenever we fail to fully align their goals with ours, which is strikingly difficult. e.g. if you ask an obedient intelligent car to take you to the airport as fast as possible, it might break the rules of traffic and speed to do so.

Here, we should not forget that AI and Robots have already contributed immensely to work in war torn, disease ravaged and unfathomable terrains like Mars, where it is not or has not been possible for a human to reach and work without fear of his life or health. It cannot be denied that with their help unfathomable heights can be attained by human race. So, the question is how can we ensure that machines behave ethically and that they are used ethically? With ethical issues, legal implications also arise.

Some of these implications are co-aligned with ethical issues while others are independent issues. Such implications are:

1. Regulation

The major concern with respect to AI is that we need to understand how to regulate it and its actions. What is to be done when machines are involved in mishaps or they commit an illegal act? Humans are to stand trials for their wrongdoings, are held accountable for their acts and have to bear financial and emotional liability. However, in case of machines who is to be held responsible and liable in such circumstances - Machine, its owner, its developer/manufactures or its software programmer?

2. Ethics, Empathy Emotions

One of the major issues that is raised with respect to AI is that it responds only on basis of data and calculations and not experience and intuition. However, a situation may arise where AI needs to make split-second decisions, and if such decisions are merely based on data, the nuance of humanity may get detached from this situation. Similar problem was raised by the movie ‘I, Robot’ where a 12 year-old girl was left to drown based on cold logic as her survival rate was estimated to be lower by a robot. Would leaving such life and decisions in the hands of AI and letting it decide matters of risk and injury will be practical? In view of safety being one of the functions devised for AI, it becomes necessary to program ethics in AI. The question remains as to how do we program ethics into AI?

Ethics needs to be integrated with Emotions and Empathy, and even some humans are devoid of these, thus this task becomes even more difficult. There are also certain risks involved as these phenomena increases self-awareness and that may trigger self-preservation and all other feelings that a human may experience.

3. Residential Status and Responsibility

Determination of residential status or nationality and finding out the responsible person for certain actions,

are individually important tasks, and whether it is the existing municipal laws or international laws determination of residential status along with responsibility are often compositely important.

Where do AI machines live? What does that mean for our communities and taxation systems? So much of our tax system is set by state and local governments and is based on where the business activities happen. Many AI activities will take place in the cloud, in multiple locations throughout the world. The question is how will we adapt in this system?

4. Virtual activity

The forecast: The world will be less physical, more virtual. What will we do? How will we structure our systems? How will we work with each other in a world where there's not as much physical activity, but there's so much more intellectual activity and virtual activity?

5. Displacement

What will the legal system do for workers who lose their jobs to AI? AIs are there to assist humans and not to replace them. However, increasingly companies are firing human labourers and intelligent machines are taking their place. There is a need of regulating and capping the intake of AIs in place of humans. Thus, certain rules need to be formulated to this end.¹⁵

Machine learning raises a number of conceptual difficulties and legal issues because the legal system is based around the fundamental notions of justice and liability. Thus, if you do something bad to me, I have the opportunity to seek legal redress. But what if it is a machine and not a human that makes a faulty decision? Legal researchers refer to this as the "Causation Challenge," and the reason why it raises so many legal issues is because it is very hard to establish "fault" if an AI system is involved. For example, what if an AI-powered medical system makes a recommendation, and that recommendation leads to serious injury or even death? Would anyone be able to sue that AI system for medical malpractice?

Now, moral obligations with respect to artificial intelligence also need to be discussed. And more than AI and machines the moral obligation of the creators and users of artificial intelligence and the machines needs to be discussed. It should be very clear in our minds that machines have been created for assisting the human race and not competing against it. One of the greatest worries around the globe is that machines are increasingly taking the place of humans especially in industrial sector. Humans have been hit with unemployment due to artificial intelligence. Here it is not mental rather physical drawback of human bodies that need rest whereas machines can work tirelessly. If this keeps going on, then without any doubt anarchy would be created in world. Kriti Sharma, vice-president of Bots and AI, from Sage states that they are creating AI to do things like automate expense reporting and other administrative tasks which some employees spend as much as 30 percent of their time on. "That is time wasted," she said at an event, adding that humans should spend their time on things that really matter.¹⁶ It needs to be understood that machines are not there to replace humans. Human race is to be the bigger role. Machines cannot take place of humans as they are not equipped with emotions, experience and vision. These are the factors, which make humans superior than any other species on the face of this earth and even artificial intelligence, as based on them humans can take intelligent decisions whereas AI is only equipped with data and they do not act on instinct.

Conclusion and Suggestions

As researchers and developers, to take fundamental human values as the basis of our design and implementation decisions. And as users and owners of AI systems, to ensure a continuous chain of responsibility and trust encompassing the acts and decisions of the systems as these learn and adapt to our society. Though Artificial Intelligence (AI) is a boon to human beings in various areas but still it requires checks and framing of policy for the proper governance of AI.

The ethical implications involve declining of jobs i.e. increase in unemployment. It will also lead to inequality in the form of unequal distribution of wealth and confining the same in the hands of few. With the increase in AI, the revenues will be generated by the companies using AI and very few employees. The question of labour economy will be in front of us.

Second issue is that what will be our safeguards against the AI mistakes and detrimental behavior. This issue is very important and needs to be pondered upon as the AIs functions purely on the data and not in the way

humans intend to. The dominance of human beings' had started due to their unity, innovativeness, inventiveness and intelligence. The point is whether in years to come will human beings be only the most intelligent beings on earth or the world will be dominated by the AI.

Third issue is that once we consider a machine, as an entity that can perceive, feel and act, then the consideration for the legal status too will arise.

These ethical and legal aspects are required to be considered very strictly and then properly dealt. What we need to understand is that what we mean by AI is that its progress means betterment of human beings. Their existence is for human beings not the other way round. The vast potential of AI requires for a very responsible implementation in the light of ethical and legal aspects involved in this issue and this is undoubtedly our own responsibility. We have to consider as to where we put a stop on extension of use and utility of AI.

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