AN ANALYSIS OF THE LEGAL STATUS OF ARTIFICIAL INTELLIGENCE IN INTELLECTUAL PROPERTY RIGHTS: ITS IMPACT, ADVANTAGES, AND DISADVANTAGES

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ABSTRACT

"Artificial intelligence will reach human levels by around 2029. Follow that out further to, say, 2045; we will have multiplied the intelligence, the human biological machine intelligence of our civilization a billion-fold."

Ray Kurzweil

The article focuses on concept of artificial intelligence and its implementation in industrial scale. It reviews its meaning and definitions, and its various types such as Artificial Narrow Intelligence, Artificial General Intelligence, and Artificial Super Intelligence. It also poses a new issue relating to legal status of artificial intelligence in intellectual property rights whether it would be considered as a copyright or a patent as Artificial intelligence is relatively a new area of debate concerning IPR laws. Besides this, while emphasizing on various advantages of AI right from reduction of human labour, taking of risk on behalf of human beings, 24*7 availability , faster decision making to providing digital assistance and many others, the Author has also discussed its possible disadvantages such as it involves high cost of creation, makes human being lazy, generates unemployment, lacking human emotion and rational thinking etc. with its positive impact on the society. The readers are encouraged to explore alternative views and perspectives on this subject

KEY WORDS:

Artificial Intelligence (AI), Intellectual Property Rights (IPR)**, Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI), Artificial Super Intelligence (ASI).**

1. INTRODUCTION:

Artificial Intelligence (henceforth referred as AI) is a technology that has completely revolutionized the 21st century. According to Dave Waters, predicting future isn't magic, its artificial intelligence. Since the invention of computers or machines, their capability to perform various tasks went on growing exponentially. Humans have developed the power of computer system in terms of their diverse working domains, their increasing speed and reducing size with respect to time. A branch of computer science named *Artificial Intelligence* pursues creating the computers or machines as intelligent as human beings.

While concepts already date back more than 50 years, only recently have technological advances enabled successful implementation at industrial scale. Earlier in 1950's artificial intelligence success were limited to the scientific field but in the last years, established

IT giants like Google, IBM, and NVIDIA fuelled by the abundance of data, algorithmic advances, and the usages of high performance hardware for parallel processing have been bridging the gap between science and business applications.

As AI is a part of our everyday life and therefore, the researcher has discussed in this article the concept of artificial intelligence, its various types, legal status of Artificial Intelligence in Intellectual Property Rights and various advantages and disadvantages.

2. HYPOTHESIS:

1. The existing IPR laws are not competent to address the issues regarding identification of inventors and other violations when artificial intelligence is involved with creation. Therefore, such rights shall be considered in the domain of IPR.

2. Every new technology or invention may have both advantages as well as disadvantages. Therefore, it is always left upon the human intelligence to use the massive benefits of artificial intelligence wisely.

3. AI has the potential to bring about numerous positive changes in society, including enhanced productivity, improved healthcare, and increased access to education. AI-powered technologies can also help solve complex problems and make our daily lives easier and more convenient.

3. OBJECTIVES OF THE STUDY:

1. To study the concept and types of artificial intelligence.

2. To study the Legal Status of AI in Intellectual Property Rights (IPR)

3. To study the advantages and disadvantages of AI

4. To analyze the positive impact of AI on society.

5. To conclude with proper recommendations

4. MEANING OF ARTIFICIAL INTELLIGENCE:

In 1956, the term Artificial Intelligence was defined by John McCarthy. He defined AI as:

'The science and engineering of making intelligent machines[1834].'

Stuart Russell and Peter Norvig[1835] proceeded to publish, Artificial Intelligence: A Modern Approach becoming one of the leading textbooks in the study of AI. In it, they delve into four potential goals or definitions of AI, which differentiates computer systems on the basis of rationality and thinking vs. acting:

Human approach:

- Systems that think like humans

- Systems that act like humans

Ideal approach:

- Systems that think rationally

- Systems that act rationally

At its simplest form, artificial intelligence is a field, which combines computer science and robust datasets, to enable problem-solving. It also encompasses sub-fields of machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence. These disciplines are comprised of AI algorithms which seek to create expert systems which make predictions or classifications based on input data.

The Oxford dictionary defines AI as:

"The theory and development of computer systems able to perform tasks that normally requires human intelligence such as visual perception, speech recognition, decision making and translation between languages".

Artificial Intelligence can also be defined as the development of computer systems that are capable of performing tasks that require human intelligence, such as decision making, object detection, solving complex problems and so on.

1834 http://www-formal.stanford.edu/jmc/whatisai/whatisai.html.
1835 Russell, S., & Norvig, P. , *"Artificial intelligence: A modern approach"* , Pearson Education, 2016, 3rd ed.

5. TYPES OF LEARNING IN ARTIFICIAL INTELLIGENCE

1. Artificial Narrow Intelligence

2. Artificial General Intelligence

3. Artificial Super Intelligence

These are the three stages through which AI can evolve, rather than the 3 types of Artificial Intelligence.

Artificial Narrow Intelligence (ANI)[1836]

Also known as Weak AI, ANI is the stage of Artificial Intelligence involving machines that can perform only a narrowly defined set of specific tasks. At this stage, the machine does not possess any thinking ability; it just performs a set of pre-defined functions.

For examples of Weak AI include Siri, Alexa, Self-driving cars, Alpha-Go, Sophia the humanoid and so on. Almost all the AI-based systems built till this date fall under the category of Weak AI.

Artificial General Intelligence (AGI)[1837]

Also known as Strong AI, AGI is the stage in the evolution of Artificial Intelligence wherein machines will possess the ability to think and make decisions just like us humans.

There are currently no existing examples of Strong AI, however, it is believed that we will soon be able to create machines that are as smart as humans.

Strong AI is considered a threat to human existence by many scientists, including Stephen Hawking who stated that:

"The development of full artificial intelligence could spell the end of the human race…. It would take off on its own, and re-design itself at an ever-increasing rate. Humans, who are limited by slow biological evolution, couldn't compete and would be superseded."

Artificial Super Intelligence (ASI)[1838]

Artificial Super Intelligence is the stage of Artificial Intelligence when the capability of computers will surpass human beings. ASI is currently a hypothetical situation as depicted in movies and science fiction books, where machines have taken over the world.

Elon Musk quoted that "The pace of progress in artificial intelligence (I'm not referring to narrow AI) is incredibly fast. Unless you have direct exposure to groups like Deep mind, you have no idea how fast—it is growing at a pace close to exponential. The risk of something seriously dangerous happening is in the five-year timeframe. 10 years at most."

Legal Status of AI in Intellectual Property Rights (IPR):

The Intellectual Property Rights (IPR) is a vital tool to safeguard and incentivize the innovations of the human intellect. Artificial intelligence is relatively a new area of debate concerning IPR laws such as copyright and patent laws. Differentiating between actual human consciousness and artificial consciousness is often the central area of discussions involving IPR and artificial intelligence. One of the prominent predicaments resides in determining the liability in cases of failures of such innovations. The WIPO is constantly involved in such discourses and is actually trying to find out solution to such problems. The existing IPR laws are not competent to address the issues regarding identification of inventors and other violations when artificial intelligence is involved with creation. Therefore, recognizing artificial intelligence in the domain of Intellectual Property Rights (IPR) is a continuous matter of debate before the lawmakers and other experts.

Even though Copyright Act and Patent Act contain variety of good provisions but like many countries, India also lacks provision for regulation of artificial intelligence with

1836 Nilsson, N.J.,"The Quest for Artificial Intelligence: A History of Ideas and Achievements", Cambridge University Press, 2010.

1837 **Goertzel, B., & Pennachin ,C. "***Artificial General Intelligence. Springer***", 2007**

1838 **Bostrom, N, "***Superintelligence: Paths, Dangers, Strategies.***",** Oxford University Press,**2014**

Intellectual Property Rights. The concept of giving an inventor status to machines is still questionable and unfamiliar in the country. Some of the provisions in the existing laws restrict the expansions of the idea of the creator. Thus, only humans can obtain protection under the existing laws in India.

The RAGHAV case:

In 2020, the Indian Copyright Office faced <u>a notable case involving an AI system named 'RAGHAV'</u> and its attempt to secure copyright registration for an artwork called 'Suryast.' Initially rejected for lacking a human author, the painting was later granted protection when a natural person was named as a co-author alongside 'RAGHAV.' Subsequently, a withdrawal notice was issued, seeking clarification on the legal status of 'RAGHAV,' highlighting the ambiguity surrounding AI's qualification as an artist under the Copyright Act.[1839]

6. ARTIFICIAL INTELLIGENCE AND DATA PROTECTION:[1840]

Undoubtedly, the data are an extremely important component of AI applications. The obvious reason is that such applications rely upon "machine learning techniques that use data for training and validation. The creative works may be produced by an AI application that learns from data that has been used to train such an AI application. The data so used may be economically valuable and may have copyright protection. The important question which arises is whether the use of such data for the purpose of machine learning without authorization from the copyright owner amounts to copyright infringement.

Another mind-boggling question which may arise is that if an AI application automatically produces a work which is similar to the original work contained in the data used for machine learning, would this amount to an infringement of copyright? If yes, who is going to

be the infringer in such a case and how the copyright will be enforced? On the contrary, should there be "free flow of data" so that improvisation could be made in the AI?

In response to the aforesaid questions, it will be appropriate to refer to the doctrine of fair use or dealing. Where the economic value of the copyrighted work used for machine learning has been reduced to its owner due to AI created work, it may not be considered as fair use or dealing. If it does not result in the reduction of the economic value of such work, then it may qualify as fair use or dealing depending upon the national laws of countries. Ordinarily, the economic value of copyrighted material used in training algorithms is not affected. Therefore, if a work is created using an algorithm powered tool, which is completely different from the copyrighted material used for machine learning, the economic value of the latter is unlikely to change. On the analogy of Google Book case, it may be suggested that the use of copyrighted works for the non-expressive purpose of training AI models amounts to fair use. It is noteworthy that Japan has amended its copyright laws and included exemptions of the use of copyrighted works for machine learning. It is also important to note that the "selection or arrangement of data", being an intellectual creation may be a subject matter of protection under copyright or a sui generis law under various jurisdictions. The data contained in such compilation may or may not be copyrighted. Looking at the important and increasing role played by AI, it is sine qua non to have a legal framework on data protection from the point of view of ascertaining the authorship in case of creative works and inventor-ship in case of inventions. Such a law is also needed for promoting creativity and innovation and for assuring fair market competition in the society. The law needs to have a balanced approach because the over protection of data may adversely affect the machine creativity which is likely to dominate the field of creativity in the future. India, unfortunately, does not have a data protection law as of now. However,

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[1839] https://copyright.gov.in

[1840] V. K. Ahuja,"ARTIFICIAL INTELLIGENCE AND COPYRIGHT: ISSUES AND CHALLENGES", ILI Law Review, Winter Issue 2020,pp-283-284

computer programmes, tables and compilations including computer databases are protected in India under Copyright Act, 1957 as literary works.

7. ADVANTAGES AND DISADVANTAGES OF AI:[1841]

Advantages:-

1. Reduction in Human Error:

The phrase "**human error**" was born because humans make mistakes from time to time. Computers, however, do not make these mistakes if they are programmed properly. With Artificial intelligence, the decisions are taken from the previously gathered information applying a certain set of algorithms. So errors are reduced and the chance of reaching accuracy with a greater degree of precision is a possibility.

Example: In Weather Forecasting using AI they have reduced the majority of human error.

2. Takes risks on behalf of Human beings:

This is one of the biggest advantages of Artificial intelligence. It can overcome many risky operations of human beings such as it can go to mars, defuse a bomb, explore the deepest parts of oceans, mining for coal and oil and can also be used effectively in any kind of natural or man-made disasters.

Example: Have you heard about the **Chernobyl** nuclear power plant explosion in Ukraine? At that time there were no AI-powered robots that can help us to minimize the effect of radiation by controlling the fire in early stages, as any human went close to the core was dead in a matter of minutes. They eventually poured sand and boron from helicopters from a mere distance.

AI Robots can be used in such situations where intervention can be hazardous.

3. Available 24x7:

An Average human being can work for 4–6 hours a day excluding the breaks. Humans are built in such a way to get some time out for refreshing themselves and get ready for a new day of work. Since AI is a machine it can be made to work 24x7 without any breaks and they don't even get bored, unlike humans.

Example: Educational Institutes and Helpline centers are getting many queries and issues which can be handled effectively using AI.

4. Helping in Repetitive Jobs:

In our day-to-day work, we will be performing many repetitive works like sending a thanking mail, verifying certain documents for errors and many more things. Using artificial intelligence we can productively automate these mundane tasks and can even remove "**boring**" tasks for humans and free them up to be increasingly creative.

Example: In banks, we often see much verification of documents to get a loan which is a repetitive task for the owner of the bank. Using AI Cognitive Automation the owner can speed up the process of verifying the documents by which both the customers and the owner will be benefited.

5. Digital Assistance:

Some of the highly advanced organizations use digital assistants to interact with users which save the need for human resources. The digital assistants also used in many websites to provide things that users want. We can chat with them about what we are looking for. Some chat bots are designed in such a way that it's become hard to determine that we're chatting with a Chabot or a human being.

Example: We all know that organizations have a customer support team that needs to clarify the doubts and queries of the customers. Using AI the organizations can set up a Voice bot or Chat bot which can help customers with all their queries. We can see many organizations already started using them on their websites and mobile applications.

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6. Faster Decisions:

Using AI alongside other technologies we can make machines take decisions faster than a human and carry out actions quicker. While taking a decision human will analyze many factors both emotionally and practically but AI-powered machine works on what it is programmed and delivers the results in a faster way.

Example: We all have played Chess games in Windows. It is nearly impossible to beat CPU in the hard mode because of the AI behind that game. It will take the best possible step in a very short time according to the algorithms used behind it.

7. Daily Applications:

Daily applications such as Apple's **Siri**, Window's **Cortana**, Google's **OK Google** are frequently used in our daily routine whether it is for searching a location, taking a selfie, making a phone call, replying to a mail and many more.

Example: Around 20 years ago, when we are planning to go somewhere we used to ask a person who already went there for the directions. But now all we have to do is say "**OK Google** where is Visakhapatnam". It will show you Visakhapatnam's location on google map and the best path between you and Visakhapatnam.

8. New Inventions:

AI is powering many inventions in almost every domain which will help humans solve the majority of complex problems.

Example: Recently doctors can predict breast cancer in the woman at earlier stages using advanced AI-based technologies.

As every bright side has a darker version in it. Artificial Intelligence also has some disadvantages. Let's see some of them

Disadvantages :-

1. High Costs of Creation:

As AI is updating every day the hardware and software need to get updated with time to meet the latest requirements. Machines need repairing and maintenance which need plenty of costs. Its creation requires huge costs as they are very complex machines.

2. Making Human Beings Lazy:

AI is making humans lazy with its applications automating the majority of the work. Humans tend to get **addicted** to these inventions which can cause a problem to future generations.

3. Leads to Unemployment:

As AI is replacing the majority of the repetitive tasks and other works with robots, human interference is becoming less which will cause a major problem in the employment standards. Every organization is looking to replace the minimum qualified individuals with AI robots which can do similar work with more efficiency.

4. No Emotions:

There is no doubt that machines are much better when it comes to working efficiently but they cannot replace the human connection that makes the team. Machines cannot develop a bond with humans which is an essential attribute when comes to Team Management.

5. Lacking Out of Box Thinking:

Machines can perform only those tasks which they are designed or programmed to do, anything out of that they tend to crash or give irrelevant outputs which could be a major backdrop.

8. POSITIVE IMPACT ON THE SOCIETY[1842]:

Artificial intelligence can dramatically improve the efficiencies of our workplaces and can augment the work humans can do. When AI takes over repetitive or dangerous tasks, it frees up the human workforce to do work they are better equipped for—tasks that involve creativity and empathy among others. If people are doing work that is more engaging for them, it could increase happiness and job satisfaction. With better monitoring and diagnostic

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[1842] Brynjolfsson, E., & McAfee, A. , *"The second machine age: Work, progress, and prosperity in a time of brilliant technologies"*, W.W. Norton & Company, 2014, pp. 78–102.

capabilities, artificial intelligence can dramatically influence healthcare. By improving the operations of healthcare facilities and medical organizations, AI can reduce operating costs and save money.

It is worth mention that the society will gain countless hours of productivity with just the introduction of autonomous transportation and AI influencing our traffic congestion issues not to mention the other ways it will improve on-the-job productivity. Freed up from stressful commutes, humans will be able to spend their time in a variety of other ways.

The way the criminal activity is uncovered and solved the criminal cases will be enhanced with artificial intelligence. Facial recognition technology is becoming just as common as fingerprints. The use of AI in the justice system also presents many opportunities to figure out how to effectively use the technology without crossing an individual's privacy.

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Several startup companies have emerged in India in the recent past (Jain, 2017). According to a report by Zinnov, there are around 170 AI related startups in India and these have received an investment of $36 million in total (India-based…, 2018). 64 out of these are located in Bengaluru. These are working in the domains of healthcare, e-commerce, finance, etc. Tuplejump, a startup helps the clients visualize the data while taking a decision. It has been acquired by Apple. ClearTax is developing a solution for e-filing using documents directly. AIndra is developing devices with computer vision ability for the applications like facial recognition, detection of cervical cancer, etc. A list of example startups in India is given in Table No. 1.

Edge Networks has developed a solution to match the job profiles with the job seekers. It helps the companies reduce the time and money spent on hiring. Fluid AI has developed a solution to work as gesture controlled

assistant. When a customer approaches any product, the system helps with the information just like a human does. It is meant for use in shops to reduce the operational cost. Flutura has developed a solution called Cerebra which collects data on the conditions of the machines and analyzes to advise on the repair schedules, etc. This is expected to reduce the down time of the machine and increase its life. Heckyl collects information on several issues to assist people in stock trading. It is meant for investors, fund managers, brokerage firms, etc. Mad Street Den supports use in searching for products using captured photos.

ShopR360 has developed a video analytics solution which can be used to analyze CCTV videos. It can distinguish staff from the customers and helps in the strategic placements of the products in the stores. has developed a solution which can be used for developing conversational assistants for placing orders like booking cabs, payment of utility bills. The client list of includes HDFC Bank, Oxigen Wallet, Ticketgoose. SigTuple is focussing on the affordable solutions for medical diagnosis using AI a microscope and a cell phone. Socialcops develops solutions to assist in decision-making. It assists by visualization of the collected data. PHRAZOR from Vphrase converts structured data such as graphs into natural language sentences. This is used for automated generation of reports on various topic

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9. CONCLUSION AND SUGGESTIONS:

After above discussion, it can be said that It is true that with the advent of artificial intelligence, human work will reduce in many ways and the day will not be away when more number of machines will start running on the earth than the number of humans as we see n the case of mobile phones, every person has mobile phones according to his financial capacity. Future is always unpredictable. Any technological or scientific invention is always made for the welfare of the people and society at large but it's up to the people how they make use of it. No doubt, studies say that AI is poised to have a major effect on sustainability, climate change and environmental issues. Ideally and partly through the use of sophisticated sensors, cities will become less congested, less polluted and generally more livable. Let's hope for better future with emergence and development of AI.

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