

JOURNAL FOR LAW STUDENTS AND RESEARCHERS**ROLE OF ARTIFICIAL INTELLIGENCE IN
INTELLECTUAL PROPERTY RIGHTS****TARUSHA MATHUR & HIMANSHU MORWAL****Manipal University, Jaipur**

“Everything we love about civilization is a product of intelligence, so amplifying our human intelligence with artificial intelligence has the potential of helping civilization flourish like never before – as long as we manage to keep the technology beneficial.”

-Max Tegmark, President of the Future of Life Institute

ABSTRACT

‘Artificial Intelligence’ has been created to make human life easier. In this era of advanced technology, Artificial Intelligence plays a crucial role in boosting not only economy but also enhancing the newly developed technology globally. Artificial Intelligence is pushing the innovation into new space through many ways and also accelerating technological advancements in the field of computing power, algorithms and data. The Artificial Intelligence system is rapidly growing and evolving by incorporating sophisticated yet outstanding new advanced technologies that it is expected that it is expected to outnumber the human involvement by producing such next generation ‘inventions’. Along with being a blessing for the generation, it has posed serious challenges to the Intellectual Property Rights including both Patent and Copyright. The Artificial Intelligence promises the ability to manipulate, altercate tonnes of data in volume efficiently, rapidly, by identifying the pattern and by optimizing the best possible solution in day-to-day scenario. This Article highlights the importance and role of Artificial Intelligence in Intellectual Property Rights.

INTRODUCTION

Technology has now become an integral part of human life. It has come up to make life easier and comfortable. Artificial Intelligence systems have sophisticated software enabled in them which lets them do almost every task- either simple or complicated. With the growth of new technologies, the need for creating more laws has been witnessed. Artificial Intelligence can also lead to new inventions and even creative works which brings into light whether such works should be granted Patent Rights and Copyright like it is granted in case of human beings. Artificial Intelligence can be of great help in reducing human casualties like natural disaster and accidents in any conflicting situation or toxic work place. This newly developed technology can also be very useful in extending casual work like cleaning, shopping and transportation etc. Artificial Intelligence is paving its way into fields like **Healthcare** by innovation of advanced machineries which can be of great help in diagnosing severe diseases in man-kind. One of the best known healthcare technologies is IBM Watson.

Artificial Intelligence is also emerging vast in field of **Business** by training automation in Robotics to perform normal and repetitive tasks which cannot be performed by humans after a certain level. These robotics are imbued with logarithms, patterns into their system to perform the following tasks and serves the customers at its best.

Artificial Intelligence provides a huge opportunity to those involved in **Education** system. Artificial Intelligence upgrade researching skills and teaching patterns and Artificial Intelligence acts as an Artificial Intelligence tutor which assist and provide additional support to students , ensuring they stay on track.

Artificial Intelligence has a vast scope in finance, manufacturing and law as well as they tend to provide and collect data, recognize the patterns and directions which will ultimately provide help to the humans by reducing their burden of work.

ARTIFICIAL INTELLIGENCE

Artificial Intelligence is the ability of the digital computer or machine controlled robots to perform certain tasks like performed by human intellects. The term 'Artificial Intelligence' was propounded by Mr. John McCarthy, a computer scientist at a conference in 1956. According to him, it was the notion of a program, processing and acting on information, such that the result is parallel to how an intelligent person would respond in response to similar input¹.

An Artificial Intelligence process includes machine learning, speech processing, expert system, robotics, reasoning and correcting by self. The AI system finds the best way to solve a problem or perform a task based on whatever it has learned earlier or to say whatever is stored in it previously. For example, if a machine has been trained to recognize colored traffic lights then the machine will showcase the lights red, yellow, pedestrian, accordingly as it has been trained and set up in the system of the device. Then the question arises what happens when the machine encounters an object which it has not learned about. In such a situation, the machine uses whatever it has learned about the other object. Then it tries to infer from such learning that what the newly encountered object might be. This is what is called 'State of the Art'. The machine uses its previous learning and tries to resolve the problem and present with an outcome.

Artificial Intelligence can be further categorized as Weak and Strong Artificial Intelligence. The Weak or Narrow Artificial Intelligence is the kind of system which is designed to perform a specific task. Apple's SIRI is an example of weak Artificial intelligence.

The Strong Artificial Intelligence or Artificial General intelligence is the kind of Artificial Intelligence system which consists of generalized human cognitive abilities.

When the system encounters any unfamiliar task, the Artificial Intelligence system is able to recognize the error it tries to provide the best possible solution.

¹ Raquel Acosta, Artificial Intelligence and Authorship Rights, Harvard Journal of Law and Technology (Feb. 17, 2012), <https://jolt.law.harvard.edu/digest/artificial-intelligence-and-authorship-rights>

USE OF ARTIFICIAL INTELLIGENCE

Artificial Intelligence is now being used in almost all spheres. In the field of agriculture it has helped in growth of crops. In the field of Aviation, the Air Operation Division uses Artificial Intelligence to surrogate operators for combat which includes operating drones. Artificial Intelligence has played a major role for the development of Computer Science, Smart cars, Music and Streaming. It can also be a great asset in the classrooms. An AI tutor in the classrooms would be a great help for a better and wide understanding. Artificial Intelligence has the best use in Hospitals and the medical field. Artificial neural networks are being used as clinical decision support systems for medical diagnosis.

HISTORY

During the Second World War, Computer Scientist Alan Turing worked to crack the 'Enigma Code' used by the German Forces to send messages securely. He and his team created Bombe machine used to decipher Enigma's messages⁴. The Enigma and Bombe machine acted as the seeds of machine learning.

Alan Turing recognized a machine to be intelligent if it could converse with humans without the human being able to know that it is a machine. The term 'artificial intelligence' was first adopted at the Dartmouth Conference in the year 1956 organized by Computer Scientist John McCarthy. After the Conference, this topic became popular and lot of research was done about it.

In the year 1951, Ferranti Mark 1, a machine used an algorithm to master checkers. General Problem Solver algorithm was developed by Newell and Simon in order to solve mathematical problems. John McCarthy also developed the LISP programming language which was considered important in machine learning. During late 1960 focus was made on Machine Vision Learning and developing machine learning in robots. The first intelligent humanoid robot was built in Japan in the year 1972. From the middle of 1970 to the middle of 1990, there was shortage of funding for Artificial Intelligence research. So these years are known as 'AI Winters'. With the coming of late 1990s, Artificial Intelligence again became a major topic of research. Funds were provided for its research. Corporations and Governments started using machine learning methods in narrow domains. The present generation is using Artificial Intelligence in almost all spheres and the future generation would be the AI Generation.

However, such vast use of Artificial Intelligence systems can also pose various challenges to the generation. To be specific, conflicts between Artificial Intelligence and Intellectual Property Rights would definitely arise.

INTELLECTUAL PROPERTY RIGHTS

A right that is held by a person or by a company to have exclusive rights to use its own plans, ideas, or other Intangible assets without the worry of competition, at least for a specific period of time. These rights can include copyrights, patents, trademarks, and trade secrets. These rights may be enforced by a court via a lawsuit. The reasoning for intellectual property is to encourage innovation without the fear that a competitor will steal the idea and / or take the credit for it.

According to Article 2(vii) of the Convention establishing the World Intellectual Property Organization (WIPO) Intellectual Property includes rights relating to:

- Literary, Artistic and Scientific works
- Performances of Artists, Phonograms and Broadcasts
- Inventions in all fields of human endeavors
- Scientific discoveries
- Industrial designs
- Trademarks
- Protection against unfair competitions
- All other rights which is an outcome from intellectual activity.

According to the Trade Related Aspects of Intellectual Property Rights (TRIPS) the following are the Intellectual Property Rights:

- Copyright and Related Rights
- Right of Traders in their trade marks
- Right of manufacturers and producers on geographical indications
- Right of Designers
- Patents
- Right of Computer Technologists

- Right of businessmen for protection of undisclosed information on technology and management.

The research institutions and companies shall specifically define and protect their Intellectual rights with registration and proper documentation. Companies then have better control use of Intellectual Property rights including permitted use of licensing etc.

CONFLICT BETWEEN ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY LAW

The development of Artificial Intelligence has resulted in conflict between Artificial Intelligence and Intellectual Property Law. Artificial Intelligence can be of 2 types. They are – Strong Artificial Intelligence which require innovative thinking and logical reasoning abilities and Weak Artificial Intelligence which merely creates a program tailored to the narrow function required³. In case of a weak Artificial Intelligence a human has full control over the machine whereas in case of a strong Artificial Intelligence the machine thinks for itself and the human has less control over it.

The era of Artificial Intelligence has brought into light whether the outputs of the machine are due to its own intelligence or due to the commands of a human. The Turing Test⁴ solved this problem. According to the test the Users conversed with the machine only by text and they suggested whether it was like a human conversation or not.

The World Intellectual Property Organization (WIPO) accepted the existence of Artificial Intelligence and classified it into three categories. They are the Expert systems, Perception systems and Natural language systems⁵.

Expert systems contain programs which solve problems relating to special fields of knowledge. Perception systems allow a Computer to perceive the world with the sense of sight of hearing. Natural language Program understands the meaning of words. It requires a dictionary database. The Artificial Intelligence along with big data analytics can be used to detect the inconsistency

² <https://towardsdatascience.com/history-of-ai-484a8>

among the system and can also be used to address the growing number of challenges which the Intellectual Property Rights are facing.

LEGAL RISKS ASSOCIATED WITH INTELLECTUAL PROPERTY AND ARTIFICIAL INTELLIGENCE

Artificial Intelligence systems are being used in tech, automotive, transportation, energy, chemicals and various other Companies. Artificial Intelligence is being used in the ocean in order to detect problems with underwater oil well. It is also being used to match paint coats or coating compositions. It is to be realized that such systems have now touched almost all the spheres of human life. The day is not far when Intellectual Property protection and enforcement issues would arise. The human race needs to get prepared about such issues by making uniform legal provisions about it.

With the rising importance of data analytics, companies continue to invest in research on Artificial Intelligence for advanced use of technology and data processing capabilities.

ARTIFICIAL INTELLIGENCE AND COPYRIGHT

Copyright is the right to reproduce or do certain act regarding:

- Original Literary, Artistic, Dramatic and Musical Works
- Cinematograph film
- Sound Recordings

The basic object of copyright is to encourage authors and composers to create original works and to grant them protection from infringement of copyright. Technological progress has given rise to piracy and Copyright has come forward to protect it.

³Raquel Acosta, Artificial Intelligence and Authorship Rights, Harvard Journal of Law and Technology (Feb. 17, 2012), <https://jolt.law.harvard.edu/digest/artificial-intelligence-and-authorship-rights>

⁴ Alan Turing, Computing Machinery and Intelligence 59 MIND 236, (1950)

⁵ A.Johnson-Laird, Neural Networks: The Next Intellectual Property Nightmare? 7, The Computer Lawyer 14 (March 1990)

Artificial Intelligence is able to produce literary works. This creates the existence of copyright in the area of Artificial Intelligence.

In the case of *Burrow Gilles Lithographic Co V Sarony*⁷ granting of copyright protection to a product which is the result of a machine was discussed. The Court held that purely mechanical labor is per se, not creative. The Court here made the scope of protection of copyright narrow. In the context of this case, granting of copyright for the works of Artificial Intelligence would be difficult.

In the case of *Bleistein V Donaldson Lithographing Co*, the Court distinguished between human work and artificial work. Justice Holmes, writing for the majority delineated the uniqueness of human personality and stipulated the same as a prerequisite to a copyright⁸. The Court made its stance clear by using the words ‘something irreducible, which is one man’s alone’ which meant that there was no scope for anything that was not a product of man’s creativity⁹.

The Court had a broader view in *Alfred Bell and Co V Catalda Fine Arts, Inc*. It held that the work to be original must not be copied from any other artistic work of similar character¹⁰.

All these cases have helped in determining copyright protection in case of copyright. However, it does not give a clear picture regarding the issue.

Lovelace who is a critic against Artificial Intelligence being granted protection opines that a machine lacks creativity due to its nature to act according to the instructions given or rules made. The reason behind this opinion is that creativity is the ability to do the unpredictable that is not following the usual routine but machines always follow routine¹¹.

⁶ *Burrow Gilles Lithographic Co V Sarony*, 111 U.S 53 1884

⁷ *Bleistein V Donaldson Lithographing Co*, 188 U.S 239 1903

⁸ *Bleistein V Donaldson Lithographing Co*, 188 U.S 239 1903

⁹ *Alfred Bell and Co V Catalda Fine Arts, Inc* 191 F.2d 99 (2d Cir. 1951)

¹⁰ Final Report, National Commission on New Technological Uses of Copyright Works 4 1978

¹¹ David Gelernter, *The Muse in the Machine* 83 (Free Press, 1994)

There are various issues relating to grant of copyright protection to Artificial Intelligence. If copyright protection is granted to the works of Artificial Intelligence who gets such protection is a matter of argument. Law requires legal personhood to provide rights. Artificial Intelligence lacks legal personhood. So, copyright protection cannot be provided unless it is granted to its Creator on its behalf.

ARTIFICIAL INTELLIGENCE AND PATENT

A Patent is an exclusive right that is granted to a person who has invented something that is new and useful. It can be a completely new article or improvement of an existing article. A patent is an intellectual property (IP) right for a technical invention. It allows you to prevent others from using your invention for commercial purposes for up to 20 years. The ingredients of Patent are:

- Novelty
- Inventive Step
- Industrial Use

The owner of a Patent is allowed to sell his product and he can also grant licenses to others to sell or manufacture such product. The object of patent is to encourage inventions and to eventually make human life comfortable. Under Patent laws, the invention is granted protection and the inventor can sell it and grant licenses for a certain period of time not exceeding 20 years. The term of patent in India was for 14 years apart from food and drugs patent. Patents have now assumed an International character. The International Convention for protection of Industrial Property, The General Agreement on Tariffs and Trade (GATT) and Trade Related Aspects of Intellectual Property Rights (TRIPS) agreements have come forward to harmonize law of patents and other forms of intellectual property.

Artificial Intelligence can make inventions by the help of human instructions. An invention in order to be patentable should satisfy three criteria. They are – Novelty, Inventive step and Industrial Application. *Novelty* means it should be different from the existing prior art. In case of Artificial Intelligence, not having any access to prior art is difficult as it would definitely need some access to prior art. The reason behind this it is somehow a human fed machine. If the novelty is questionable and not a confirmed thing, *inventive step* can definitely be questioned. Novelty and Inventive step are important attributes for an invention to be patentable. If these two

are lacking, granting patent would be difficult.

However, *industrial application* can be possible. The invention can be proved useful in industries. However, only industrial application without novelty and inventive step cannot make the invention patentable. Complete newness with reference to Artificial Intelligence is hard to achieve as it requires some level of human interference. The technology has to be even more advanced so that the novelty required is satisfied and the machine is able to function without prior art.

Artificial Intelligence would definitely develop more and more in the future. Situations would arise where protection under copyright and patent would come into the picture. So a detailed guideline or framework relating to this issue must be made. The inventions and literary works created by Artificial Intelligence must be provided legal protection.

SUGGESTIVE MEASURES

Patents or Copyright protection for works by Artificial Intelligence should be provided in the form of collaboration. Works by Artificial Intelligence are a result of human interference and machines. As a result a collaborated patent or copyright protection should be granted. By this process the human effort as well as the Artificial Intelligence is valued.

Artificial Intelligence systems must be recognized. Artificial Intelligence is in existence in almost all the parts of the world but all the countries do not recognize their existence.

There should be International Platforms or Organizations to globally recognize them. There should be more and more International Conferences and Seminars to provide attention to the existence and growth of Artificial Intelligence systems.

Detailed Guidelines regarding granting of patent and copyright to the Artificial Intelligence systems should be framed. It would be even better if such guidelines are framed at an international level and are properly implemented in all the Countries.

Criminal Liability in case of inventions made by Artificial Intelligence is a controversial matter. It means if any legal wrong happens due to the work of an Artificial Intelligence who should be held liable? This issue should be solved by framing guidelines for the same.

CONCLUSION

Technology has been advancing day by day. The human race is making efforts every day to make life easier. This generation is witnessing a great dependence of humans on machines. They are not able to do without machines. Machines have become a part and parcel of life. Life is incomplete without technological dependency in today's time. Artificial Intelligence occupies a special position among machines. Such systems make inventions which cannot be made by the work of human independently possible. It has become an asset for almost all fields. On one hand, Artificial Intelligence is a boon for the society but on the other hand question arises whether the human race is ready for such level of technological advancement. Merely creating an Artificial Intelligence system won't do. The inventions by them should be granted protection. Their literary works should be given copyright protection. Who should be granted such protection – the system or the creator is also a controversial matter. Fixing of criminal liability should also be done properly. Laws should be framed regarding Artificial Intelligence and protection of the inventions and works done by them. The state of Artificial Intelligence with reference to Intellectual Property Rights is presently not clear.

Acknowledgement of the works of such system is a blessing but its implementation is an issue. Laws regarding Artificial Intelligence have lot of loopholes and require improvements.