Peer - Reviewed & Refereed Journal

The Law Journal strives to provide a platform for discussion of International as well as National Developments in the Field of Law.

DISCLAIMER

EDITORIAL TEAM

Raju Narayana Swamy (IAS) Indian Administrative Service officer

Dr. Raju Narayana Swamy popularly known as Kerala's Anti Corruption Crusader is the All India Topper of the 1991 batch of the IAS and is currently posted as Principal Secretary to the Government of Kerala . He has earned many accolades as he hit against the political-bureaucrat corruption nexus in India. Dr Swamy holds a B.Tech in Computer Science and Engineering from the IIT Madras and a Ph. D. in Cyber Law from Gujarat National Law University . He also has an LLM (Pro) (with specialization in IPR) as well as three PG Diplomas from the National Law University, Delhi- one in Urban Environmental Management and Law, another in Environmental Law and Policy and a third one in Tourism and Environmental Law. He also holds a post-graduate diploma in IPR from the National Law School, Bengaluru and a professional diploma in Public Procurement from the World Bank.

Dr. R. K. Upadhyay

Dr. R. K. Upadhyay is Registrar, University of Kota (Raj.), Dr Upadhyay obtained LLB , LLM degrees from Banaras Hindu University & Phd from university of Kota.He has succesfully completed UGC sponsored M.R.P for the work in the ares of the various prisoners reforms in the state of the Rajasthan.

Senior Editor

Dr. Neha Mishra

Dr. Neha Mishra is Associate Professor & Associate Dean (Scholarships) in Jindal Global Law School, OP Jindal Global University. She was awarded both her PhD degree and Associate Professor & Associate Dean M.A.; LL.B. (University of Delhi); LL.M.; Ph.D. (NLSIU, Bangalore) LLM from National Law School of India University, Bengaluru; she did her LL.B. from Faculty of Law, Delhi University as well as M.A. and B.A. from Hindu College and DCAC from DU respectively. Neha has been a Visiting Fellow, School of Social Work, Michigan State University, 2016 and invited speaker Panelist at Global Conference, Whitney R. Harris World Law Institute, Washington University in St.Louis, 2015.

Ms. Sumiti Ahuja

Ms. Sumiti Ahuja, Assistant Professor, Faculty of Law, University of Delhi,
 Ms. Sumiti Ahuja completed her LL.M. from the Indian Law Institute with specialization in Criminal Law and Corporate Law, and has over nine years of teaching experience. She has done her LL.B. from the Faculty of Law, University of Delhi. She is currently pursuing Ph.D. in the area of Forensics and Law. Prior to joining the teaching profession, she has worked as Research Assistant for projects funded by different agencies of Govt. of India. She has developed various audio-video teaching modules under UGC e-PG Pathshala programme in the area of Criminology, under the aegis of an MHRD Project. Her areas of interest are Criminal Law, Law of Evidence, Interpretation of Statutes, and Clinical Legal Education.

Dr. Navtika Singh Nautiyal

Dr. Navtika Singh Nautiyal presently working as an Assistant Professor in School of law, Forensic Justice and Policy studies at National Forensic Sciences University, Gandhinagar, Gujarat. She has 9 years of Teaching and Research Experience. She has completed her Philosophy of Doctorate in 'Intercountry adoption laws from Uttranchal University, Dehradun' and LLM from Indian Law Institute, New Delhi.

Dr. Rinu Saraswat

Associate Professor at School of Law, Apex University, Jaipur, M.A, LL.M, Ph.D,

Dr. Rinu have 5 yrs of teaching experience in renowned institutions like Jagannath University and Apex University. Participated in more than 20 national and international seminars and conferences and 5 workshops and training programmes.

Dr. Nitesh Saraswat

E.MBA, LL.M, Ph.D, PGDSAPM
Currently working as Assistant Professor at Law Centre II, Faculty of Law, University of Delhi. Dr. Nitesh have 14 years of Teaching, Administrative and research experience in Renowned Institutions like Amity University, Tata Institute of Social Sciences, Jai Narain Vyas University Jodhpur, Jagannath University and Nirma University.
More than 25 Publications in renowned National and International Journals and has authored a Text book on Cr.P.C and Juvenile Delinquency law.

Subhrajit Chanda

BBA. LL.B. (Hons.) (Amity University, Rajasthan); LL. M. (UPES, Dehradun) (Nottingham Trent University, UK); Ph.D. Candidate (G.D. Goenka University)

Subhrajit did his LL.M. in Sports Law, from Nottingham Trent University of United Kingdoms, with international scholarship provided by university; he has also completed another LL.M. in Energy Law from University of Petroleum and Energy Studies, India. He did his B.B.A.LL.B. (Hons.) focussing on International Trade Law.

ABOUT US

WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal providededicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

INTELLECTUAL PROPERTY RIGHTS WITH SPECIAL REFERENCE TO ARTIFICIAL INTELLIGENCE: A STUDY

AUTHORED BY - RAHUL VERMA & DR. REKHA VERMA

ABSTRACT

The rapid progressions in artificial intelligence (AI) have introduced distinctive obstacles and prospects in the realm of intellectual property (IP) rights. With the growing complexity and proficiency of AI systems, concerns emerge surrounding the ownership, safeguarding, and implementation of legal measures for the products they produce. This abstract presents a concise summary of the convergence of artificial intelligence (AI) and intellectual property rights. It specifically highlights the difficulties and consequences associated with safeguarding AI-generated innovations, copyrightable works, and data-related intellectual property. The emergence of AI has led to the development of autonomous systems capable of generating inventions and innovations without human intervention. This raises critical questions regarding patentability and ownership of AI-generated inventions. Various jurisdictions have different approaches to this issue, with some countries considering AI as a mere tool and granting patent rights to human inventors, while others recognize AI as an inventor and explore the legal ramifications of granting AI its own intellectual property rights.

Moreover, the capacity of AI to generate creative and literary creations raises apprehensions over the safeguarding of copyright. The emergence of AI-generated works, such as art, music, and literature, poses a challenge to conventional concepts of authorship and originality. Assessing the suitability of AI-generated creations for copyright safeguarding, as well as determining the ownership of those creations, is a challenging undertaking. Legal systems must be modified to account for the distinctive attributes of AI-generated inventions and achieve a harmonious equilibrium between promoting innovation and safeguarding the rights of artists. Additionally, the utilization of AI heavily relies on vast amounts of data, leading to issues surrounding data-related intellectual property rights. Intellectual property protection for datasets, training models, and algorithms becomes crucial for incentivizing investments in AI research and development. Addressing concerns regarding data ownership, data privacy, and

fair use of data in AI systems is essential to ensure a robust and ethical intellectual property ecosystem.

Ultimately, the rapid advancements in AI technology need a thorough analysis of intellectual property rights. The task of striking a balance between encouraging innovation and safeguarding the rights of artists presents considerable difficulties in the realm of AI-generated technologies, copyrightable works, and intellectual property associated with data.

INTRODUCTION

Artificial intelligence implies to intelligence prevailing in other things apart from humans. A science focusing on creating machines that behave and perform human like activities. It is a concept that makes and programs intelligent machines. Even before digital computer, scientists believed that computers can perform extremely well and be exhibit human behavior. As soon as computers came to existence there were plans to program them in way that one day, they can surpass humans and perform all the possible and impossible tasks known to mankind. Computers started solving numerical, understanding English, playing games and taking commands.

The idea of Artificial Intelligence can be traced back from the time of the Greeks. Hephaestus was a great craftsman and in Book 18, there are two distinct passages where he is described as the creator of robot-like machines. In the first paragraph, the idea of automatic waiters can be traced, *"Three legged tables he was constructing, twenty in all, to stand round the wall of his well-built hall. To these he had fitted wheels wrought of gold, so that they could run by themselves to the banquet of the gods, at his wish, and back home, leaving everyone staggered."*

In the second he introduces a girl assistant made of gold, *"Handmaidents, fashioned of gold, gave ready support to their master. Looking like genuine girls they proved their understanding by their intelligent speech, their proficient and skillful performance."*

Talos was also one of the bronze men of Hephaestus who guarded and defended Crete, and Daedalus and Arthenian architect making artificial wings to escape, was said to have created artificial people. *Antikythera mechanism* was the most surprising revelation from the Greeks that represented ancient clock computers. The arab astrologers were attributed with a thinking machine called Zairja. Is homunculus remembered? He was a little man invented by Paracelsus.

He also wrote, *"we shall be gods. We shall duplicate Gods greatest miracle—the creation of man".*[1]

Rabbi Juddah Ben Loew's invention brought a warning to the growing greed of the *g*olem builders because he builds a living clay man, Joseph Golem, which with time grew aggressive and had to be dismantled. The mortal's human should not be dabbed in the special province of God; the creation of intelligent beings and thus bringing a temporary and brief halt to the attempts of making thinking beings and thinking machines. Much before the time of Homes, such ideas can be well traced in the history of the Hindus as well. Several machines have been given reference to in the Samarangana- Sutradhara of Bhoja. In the same text[2] there is a mention about the wooden robots and the heavenly bodies in motion.

Harvey discovered the circulation of the sap in heavenly bodies in the 17th century but much before that the discussion has been found in the Vaisesika- Sutras of Kanada. The Mahabharatta discussed about the intelligence in plants. Dr. J. C. Bose conducted a well-known[3] experiment on these lines. The Panachtantra[4] gives evidence about the intelligent speeches given by birds and animals.

The Chinese too had similar achievements, one being the astronomical clock made by SuSu in 1088 A.D.[5]these mentions clearly give a view that artificial intelligence is anything outside human intelligence and the concept is not new.

Ever since the first computers came to existence, the scientists have been trying to make them think. Today computers can forecast weather conditions and even keep an eye on the movements of planets and stars in the galaxies. Extracting results for these gigantic events involve volume computational work, which puts tremendous pressure on human mind. A human mind has certain limits and cannot be pushed beyond that and hence as we know necessity is the mother of invention so came the artificial intelligence to cope up with this issue. Systems were developed that possessed certain kind of intelligence similar to that of human brain. It deals with the basic understanding of artificial intelligence and some of its most

---

[1]Pamela Mc Cordock, *Machines who Think* (Freeman, New York, 1979).
[2]P. Ray and S.N. Sen (eds.), *The Cultural heritage Of India*, 6, 59 (The Rakrishna Mission Institute of Culture, Calcutta, 1986).
[3]Peter Tompkins and Christopher Bari, *The Secret Life of Plants* 81-96 (Penguin, USA, 1974).
[4]Aurthur W. Ryder & PanchTantra, *In the Wake of Theory* (Jaico publishing House, Bombay, 1992).
[5]Richard L. Gregory, *Odd Perceptions* 67 (Routledge Kegan & Paul, 1981).

important aspects, such as expert System Natural language possessing, Neutral networks and Robotics.

Now-a-days manufacturers and service providers are more focused towards automation in every field to meet consumer satisfaction. Consumers on the other hand are enjoying automation in each work. From being involved in a car manufacturing industry to serving guests in a hotel.

Artificial intelligence is basically a computer science focused towards making machines behaving intelligently. For Artificial Intelligence there is no general and concise acceptable definition available understanding artificial intelligence is difficult task official internet intelligence have to sustain a claim that it is fine generally acceptable destination shall be needed. On one point we can say that the future of humanity is brighter with the advances been done in artificial intelligence whereas on the other point with the advances in artificial intelligence the humanness in the society is fastly becoming extent. Artificial intelligence has enormous degree of the humanizing effects contrary to the expectations of some early research in this field. By creating such types of machines, the unknown areas of brain can also be unlocked through which various philosophical solutions can be found.

Three distinct approaches were discovered by Masoud Yazdani. First one is that AI is about moving computers into the space above, second stimulating human behaviour and cognitive process on a computer and third the pace of study of nature of the intelligent minds.

IMACT OF ARTIFICIAL INTELLIGENCE ON IP POLICY

AI, which was once a sci-fi fantasy, is now a reality and has accelerated over the past several years, resulting in a slew of new discoveries in nearly every industry. Artificial intelligence will permeate every industry, and Intellectual Property Rights are no exception. There are two ways in which Artificial Intelligence will have an impact on intellectual property rights: on the one hand, it will help in the areas of patent and patent search tools, timely research on inventions, and providing a mechanism to sort inventions and ideas and provide the inventor with a mechanism on the patents already existing similar to his idea. On the other hand, it will also have an impact on the patents that are already out there and provide the inventor with a mechanism on those patents that are similar to his idea. AI's impact on intellectual property

rights, the advantages and downsides of AI on creativity and innovation, and the future of AI in intellectual property rights are all covered in this study paper.[6]

Artificial intelligence (referred to as AI in this paper) has grown rapidly in the last several years and is something that can perform simple jobs like conducting calculations to extremely complicated ones. Artificial Intelligence (AI) will be able to achieve anything a human can, and more, in the near future. In spite of this, there is still much confusion surrounding AI, which is why it has become one of the most hotly disputed topics in recent years. Although there is no single accepted definition of AI, the most basic notion is that it is about developing computers and software that can perform tasks that normally need human intelligence. Without a shadow of a doubt, artificial intelligence (AI) has had and will continue to have an impact on intellectual property (IP). However, on the other hand, it has the potential to constitute a danger to intellectual property. The influence of AI on intellectual property, including copyright, patents, and traditional knowledge, will be explored in depth in this article, as will the legal ramifications of infringement of an intellectual property claim.

It is believed that artificial intelligence (AI) will become a part of our daily lives in the not-too-distant future. The creative arts, entertainment sectors, and life-enhancing products can all benefit from new AI technologies. It's obvious, however, that policy must be adjusted to account for the social, economic, and ethical ramifications. WIPO's public consultation on technological innovation is a good development. 1 With the release of the WIPO Technology Trends report in 2019, the study began to gather evidence-based estimates for the future of AI. A Conversation on IP and Al was then organised by WIPO in September 2019 to bring and formulate the questions policymakers need to ask. WIPO issued its concerns paper in December 2019 and invited feedback from a global audience as large as possible. Technology and intellectual property have always been intertwined and as a result legislation has had to evolve to keep up with the technological and cultural developments taking place. There are a number of problems that AI technology could raise about the IP system, from inventorship to authorship to ownership. Policymakers should pay close attention to the development of artificial intelligence (AI) technologies in order to safeguard the intellectual property regime's effectiveness and to lessen the negative social, economic, and ethical consequences. Issues 1, 3, and 5 deal with patents, whereas issues 6 and 7 deal with copyright and designs, and all are

---

[6]*Id* at 43.

addressed in the WIPO draught issues document below (issue 11). For each field of IP, there are distinct difficulties and ramifications that need to be addressed by policymakers when dealing with AI.

The process of creating has undergone significant modifications as a result of the rapid advancement of AI technologies and the growth in their processing capability. With the advancement of artificial intelligence (AI) in sifting data, discovering progressed to the point where it can produce results with minimal input from a person. Patent protection would be available for human-created versions of these outputs. An important topic is whether an AI system may be defined as an inventor under present patent law. In our opinion, this question is unanswered. All aspects of the patent system are built on the concept of "the human inventor," including the rationale and fundamental ideas that underpin the system's patentability standards. The basic goal of patent law, then, is to reward and incentivize inventors' inventive endeavours, which is a utilitarian rationale. Inventing is an act of intellectual creation that is unique to the inventor - a mental act that takes place in his or her head. It is also important to note that a dividing line between patentable and non-patentable inventions is established on the basis of "human capabilities," which is why inventors are required to take an additional step of human inventiveness in order to obtain a patent. Because the focus is on 'human innovators,' there is limited room for 'non-human inventors,' who are not included in these discussions. A human inventor is the focal point in the study of issues pertaining to inventorship. Inventors' conceptions of their inventions are often used by courts to determine when an invention was created and by whom[7]. A patent in the UK, for example, is principally. According to the court in Yeda, just adding to the claims does not suffice because the claims may contain non-patentable components drawn from the prior art. It is only when one can show that they have contributed to the "inventive thought" that they are regarded the inventor. When a person makes a significant contribution to solving a specific issue, the courts normally regard that individual to be an innovator or co-inventor. A person who just provided a "unnecessary detail" to the invention must therefore be creative or clever in order to be considered an inventor. As a result, no one can claim credit for AI's invention in this case[8]. When it comes to invention patentability and the success of an invention in solving a technical problem, 'AI activity may be instrumental or decisive. When it comes to invention, these technologies should be considered as an essential

---

[7] *Id* at 41.
[8] *Id* at 40.

part of the process. We argue that the current patent law regime can accommodate AI-generated ideas by attributing inventorship to a person who cognitively dominated the innovative process, given that modern technology necessitates human engagement in the creation process of AI systems. No modifications to patent law are needed at this point in time if we consider that an AI system should be regarded as the inventor. As noted above, changes in the legal framework are likely to alter the reasoning and fundamental principles of the current patent system. It would be necessary to revaluate the systems of output protection if technology progresses to the point where no human intervention is required (the so-called "strong AI").

AI & COPYRIGHT

Whether that works is a piece of literature, music, or software. Even though the intersection of AI and copyright is not new and has been going on for many years, there was no debate over the fact that who will have the copyright over the work because the programme or machine merely worked as a tool for making that work, just like pen and paper, and the concept or the work belonged to the programmer but with the improvement in AI and when we are developing robots with human intelligence which is capable to To be considered part of artificial intelligence (AI), machine learning involves feeding data into an AI machine such that the AI machine may produce original work that is not dependent on a human being to create. As a result, the rise of AI has created a slew of copyright problems, necessitating the establishment of specific guidelines and laws to address these issues.[9]

AI & PATENT

At now, there is growing interest in the interface of AI and patent law. On the one hand, AI will be a boon to patent protection11, patent search, and patent search tools, as well as innovators, who will be able to see whether or not a comparable idea has already been thought of. AI, which is on its way to becoming intelligent enough to compete with humans, will be able to create new things without the need for human input or involvement12. Patent and artificial intelligence (AI) must be examined in specific areas, such as: Weapon: The use of artificial intelligence (AI) in combat has become a worldwide trend. The debate over how AI will be governed under International Humanitarian Law cannot be ignored, but the subject of who will acquire the patent for any weapon made by an AI system or software is ambiguous. There is a lot of emphasis on the pharma and pharmaceutical industries when it comes to

---

[9]Aviv H. Gaon, *the Future of Copyright in the Age of Artificial Intelligence* (Edward Elgar Publishing Ltd, 2021).

patents. When artificial intelligence (AI) is successful in creating a medicine, the question of patents will be raised. It's unclear who will get the patent for a vaccine invented by an AI machine, whether it's that of the AI machine or programme, or that of the programmer who created that machine or the purchaser of the vaccine. Because of this, it is impossible to determine how and at what cost the vaccine will be given to other countries if this issue is not resolved[10]. As a result, it's critical to catch these problems early. There are a plethora of initiatives aimed at improving traffic safety, but the staggering toll of lives lost as a result of collisions with other vehicles cannot be overlooked. AI may be able to come up with a way to reduce human deaths in the same way that self-driving automobiles may be developed. Other firms are already working on this aspect of road safety, and they use AI in it. Like Microsoft, the company is developing a software that uses face recognition to monitor the driver's conduct and issue a warning to prevent an accident. New technology: Patent law is all on creativity and invention, and we're constantly coming up with new things. If an AI machine or programmer invents something, it's important to know who will get the patent, and whether it will belong to the computer or the programmer.

AI & TRADITIONAL KNOWLEDGE

What we call "Traditional Knowledge" refers to a body of knowledge or practise that has been passed down through generations of a particular culture. In the community, the information is passed down from generation to generation. In some cases, AI may trespass on traditional knowledge by taking abstracts from the existing traditional knowledge. As a result of the foregoing explanation, it's possible that an AI machine or programme could violate the conventional knowledge that is a treasure trove for many cultures and societies.

AI & DESIGNS

Authorship and Ownership: AI can assist in the creation of designs, or an AI application can generate them on its own. Computer-aided design (CAD) has been around for a long time and doesn't appear to present any issues for design policy in the case of AI-assisted designs. Considered computer-aided design, AI-aided designs may be treated in the same manner. Like AI-generated creative works and inventions, there are a number of questions and concerns that arise in the case of AI-generated designs.[11]

---

[10] Russell & Norvig, *Artificial Intelligence: A Modern Approach* (4th edn., Pearson, 2022).
[11] P Mohan Chandran, *Artificial Intelligence and Intellectual Property Rights Role, Impact, Contribution, Challenges, an Legal Implications of AI on IPR* (Gurucool Publishing, 2021).

The purpose of design rights is to safeguard the visual look of goods. Copyright and design rights may be in conflict[12].

There are a number of areas in which this survey asked for feedback: It was one of the goals of this consultation to examine. An investigation into whether or whether there have been any problems with the lack of standardised laws on spare parts protection is being conducted. In this consultation, the EUIPO is looking for opinions on whether or whether the EUIPO should perform novelty investigation, despite the difficulty and technical limits of searching for earlier designs worldwide. The consultation aims to review three major parts of the Act and its application by industrial property offices and courts in relation to new emerging technologies. definition, product, and complicated product; b) the standards for protection (e.g., that a design must be "visible"; c) the extent of design protection are all examples of definitions.

Design protection for new emerging technologies, such as 3D printing, is being assessed in this survey. The breadth of design rights is also examined to see if it interferes with efforts to prohibit the passage of counterfeit design items across the Union's borders. 83 Even more importantly, the current regulation on design representation is being examined to see if it's acceptable for both tangible and non-tangible products, and if so, how new technologies affect the standards for design representation.

INVENTIONS BASED ON ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY RIGHTS

ARTIFICIAL INTELLIGENCE WORLD In computer science, artificial intelligence is a subfield (AAAI, 2003). Based on artificial neural networks, it's a computational model of the brain (Neural Network, Encyclopaedia Britannica). These mathematical procedures and a set of parameters produce an output that resembles human intellect. When it comes to artificial intelligence, "Deeply supervised machine learning" is the best way to define it. There is a good chance that (Allen, 2020) When it comes to machine learning, the computer doesn't need to be told exactly what to do in order to produce an answer. The system "learns" to spot patterns in data on its own, without any human intervention. The hardware or software, just like a human, makes judgments based on patterns. Remember the word "cognition" when you read this? (Jelinek, 1998). It is possible to process, process and analyse vast amounts of unstructured data

---

[12]*Ibid.*

by allowing the machine to learn cognitively in this manner. Books, journals, metadata, analogue data, and text in emails, audio files, video files, webpages, health records, and biomedical documents are examples of unstructured data. (Pearl, 2000 & Sowa, 2000). The linguistic, aural, and visual aspects of human communication are all included in this unstructured data. Unstructured data is labelled using these formats via machine learning. AI-based tutors in education can provide pupils with individualised instruction and support. Students benefit from a setting that is specifically tailored to meet their needs. There are endless uses for AI in healthcare. For example, it is employed.[13]

in the management of hospitals, the diagnosis of disease (Arbesu, 2016), the monitoring of patients, the outcomes of patients, the optimization of health care processes and clinical decision-making, the augmentation of clinical workflows, and the optimization of hospitals (Luger, 2002). With AI, researchers can discover patterns they never realised existed. New compounds to treat disease can be developed by them. Any task that can be completed by a computer without the involvement of a human being can be referred to as "artificial intelligence." It is also possible to use the word "machine" instead of "computer." Speak recognition, sentiment analysis, facial detection and risk assessment are all examples of cognitive computing (Libunao, 2015), as are natural language interaction and enhanced intelligence (Araoujo, 2007). Supply chain monitoring and real-time alerts in manufacturing can be provided by AI in industry. Many data sources, both internal and external, can be protected. Customer-specific dashboards can be built using all of this data. AI-driven automated cars can make up for human error (Siegwart, 2004). AI and the internet of things can be used to construct smart cities where air pollution is eliminated, and traffic is better controlled (Li, 2018).[14]

ARTIFICIAL INTELLIGENCE BASED INVENTIONS

As AI systems continue to mature, they will be able to produce creative output without the need for human participation. After a year of funding from Google, the project "The Next Rembrandt" examined thousands of paintings by Dutch artist Rembrandt Harmanzoon van Rijn from the 17th century. A 17th-century man in a black hat and white collar was depicted by the

---

[13] Randi L. Karpinia, "Intellectual Property rights of Artificial Intelligence Inventors" available at: aipla.org (last visited on June 02, 2022).

[14] Faruk Yamankaradeniz, "Artificial Intelligence and Intellectual Property Rights" *available at:* mondaq.com (last visited on May 29, 2022).

computer. In 2016, a short novel written by a computer programme in Japan competed for a national literary prize. An artificial intelligence (AI) company called DeepMind makes music. Deep learning and robotics have seen the most rapid growth in AI, while the transportation industry has had the most rapid rise in AI patenting. Communications are attentively followed. Personal gadgets, Life, and Medical Science are the next three areas to focus on. Patents based on artificial intelligence (AI) have been filed by the Chinese academy of sciences (CAS). Since 2013, the number of AI patents filed has increased at a rapid pace.

Around the year 1993, the field of artificial intelligence (AI) experienced a resurgence of enthusiasm. Powerful computers began to appear about this time. The availability of structured training data was made possible by an increase in computing capacity. In the form of a spreadsheet. Images, graphics, websites, and power point presentations are all examples of unstructured data that can be used for analysis. Structured data aids AI in learning and completing tasks. From 2012 onwards, AI grew more data-driven, resulting in new advances. Who owns the intellectual property (IP) rights in AI-based inventions? An invention is the result of a human thinking of a new way to do something. The invention is the property of that person or his or her employer. Employing AI as a tool to create an invention makes the inventor and proprietor of the innovation the person using that tool – in this example, AI. Ownership of the tool does not entitle a person to ownership of the property. The subject of whether a machine can obtain a patent for an AI idea raises some interesting ethical issues. If "a machine" is unable to obtain a patent, does it fall into the public domain? However, it is possible to give AI the legal status of a person. Legal or otherwise, there appears to be no obstacle to AI being recognised as an inventor. Patent protection gives AI creators a leg up in the market. The creator of the AI invention may be granted patent protection rights as well. A number of patent applications have included an AI inventor. Thirdly, a Laws governing intellectual property, including patents and copyright, must be updated to account for new developments in AI ethics, data security, and privacy. Patentability of AI algorithms must also be addressed by IP policy[15]. An increasing number of people believe that machines can invent things. Another concern is whether or not the innovators can share the credit for their work. The answer to this question is "yes" or "no." The function of artificial intelligence (AI) in technology is becoming more prominent. The proprietor of the innovation is expected to declare the use of AI applications (Mathur, 2020). The line between inventors and owners is clearly defined in traditional

---

[15] *Id* at 56.

applications. The inventorship of the invention is asserted by the applicant in this paragraph. The ownership of AI inventions is a grey area. People who give money toward the development of artificial intelligence (AI) can be referred to as "owners." And what about the people who contribute to the creation of AI algorithms? Shouldn't they be protected by patents? To be eligible for patent protection, an applicant must make all relevant information available. The reason for full disclosure is difficult to apply to AI inventions because of this.

IP LAWS AND ARTIFICIAL INTELLIGENCE

People who enforce intellectual property rights are increasingly concerned about the creativity and expertise displayed by AI systems. This has led to a rise in IP-related lawsuits. Because of this, we should investigate the more deliberative goals of copyright and patent rules in relation to artificial intelligence systems. Machines are now capable of producing highly creative works that, if developed by humans, would be qualified for copyright protection. In light of this, copyright standards for AI systems around the world should be re-examined. In the case of Naruto v Slater, a San Francisco court recently ruled that animals, not being human, for damages and injunctive relief for violation of copyright. Naruto, the monkey, cannot sue for copyright infringement because the Copyright Act does not explicitly authorise animals to file such actions, according to the Court. Because animal copyright is no longer an issue, artificial intelligence systems have found themselves in a similar predicament. Many copyright offices across the world do not yet record works created by machines. There has been a similar problem with patent laws. If machines meet the novelty requirements of patent law, there will be questions about ownership of such innovations. Also, can robots or machines be awarded ownership of future inventions? How may infringement and damages be calculated if AI steals a work or reproduces an invention? These are some of the hotly contested topics that occur in the context of AI and intellectual property laws.

CONCLUSION

Researcher's key tool in their toolbox has proven to be designing and implementing an IP strategy. Researcher is interested in an effective IP strategy for two main reasons. One benefit is that it guarantees the best possible use of the researcher's limited resources. Two, creating an effective IP strategy gives Researchers greater control over their circumstances, addressing any underlying uncertainty. Technology innovation has been proven to be negatively impacted by uncertainty, which is more common in developing countries where laws, business models, and

technology are still in their infancy. A recent survey revealed that despite recent technological advancements, SuSu development in the uncertain developing industry of AI has not yet accelerated because of worries about AI-related IP issues including ownership and legality (Delponte, 2018). Researchers are frequently thought of as those who address societal issues by proposing innovative business strategies and solutions (Bradley et al., 2021). In light of the fact that promoting AI development by researchers is important for combating climate change and eradicating poverty (Bradley et al., 2021). There seemed to be a lack of investigation in the IP tactics used by AI Researchers despite this promise and the desire for more clarity. By filling this gap, a framework for studying IP protection in the context of AI is created. Furthermore, by incorporating preexisting ideas with fresh empirical evidence, existing understanding on IP strategy is expanded.

Which intellectual property tactics are employed by start- and scale-ups in the realm of artificial intelligence products? was the study topic that was inspired by these preliminary findings. where IP strategies were established by how numerous appropriability methods were set up. Studies by Wan et al. (2020) and Kulkarni & Padmanabham (2017) discovered that software Researcher and AI Researcher are most similar. A comparison of IP linked to software and IP related to AI, however, outlines a number of elements that are different between the two, despite previously being discovered to have an impact on IP strategy. Therefore, an abductive method was used, utilising extensive literature while also being open to new findings.

The first step was to discover pertinent appropriability methods utilised by software researchers by reviewing the literature on software SuSu IP tactics. The literature study that followed was inspired by Teece (1984) and Hemphill (2004), who highlighted how market and innovation considerations affect IP strategy. Different IP strategy variations were predicted by six theory-driven themes. The next step was to approach a variety of AI SuSu stakeholders for semi-structured interviews where variables from earlier literature and (new) emergent aspects might be discussed. Thematic analysis was then conducted to produce (new) data-driven themes and uncover support for theory-driven themes. 39 The findings point to an increase in informal appropriability mechanisms use overall as compared to software researchers. As AI researchers trust in the protection offered from the ambiguity of AI-related intellectual property, secrecy is used the most.

SUGGESTIONS

- There is a pressing need today more than ever to adopt IP regulations that can protect AI innovation and award new works and innovations with copyright or patent protection.[16]

- To distinguish between AI-created works and AI-aided works, a special test must be devised. The precise IP holder can then be identified.

- It is not yet clear where AI systems fall in the patent law's definition of an innovation vs an inventor. Clarity and specificity in the law are required, as is the inclusion of such provisions in plain language.

- Furthermore, the concept of authorship under the Copyright Act should be evaluated and updated as the dynamics of copyright law evolve.

- Trademark laws have also been ambiguous. AI's relationship to humans and its ability to function, especially in cases where human common sense plays a large role, must be specified.

- However, international policy should be developed to address the emerging challenges of AI, which WIPO has already recognised and discussed in numerous forums.[17]

- Data protection for AI soft18ware requires a specific law to be passed. It must include all civil and criminal obligations and offences that have the same legal effect as one another. IP sharing between artificial intelligence's creator and the AI itself may become a reality in the coming years. It's going to be an integral part of the overall development and maintenance strategy. It's hard to imagine what the future of transportation may hold, but it's sure to be exciting.

---

[16] Finland, "Finland's Age of Artificial Intelligence - Turning Finland into a Leader in the Application of AI" *Ministry of Economic Affairs and Employment* (2017) *available at:* https://tem.fi/en/artificial-intelligence-programme (last visited on May 19, 2022).

[17] *id* at 105.