ISSN (O): 2584-2196

INTERNATIONAL JOURNAL OF LEGAL AFFAIRS AND EXPLORATION

Volume 3 | Issue 1

2025

Website: www.ijlae.com
Email: editor@ijlae.com

ISSN (O): 2584-2196

CHALLENGES TO COPYRIGHT LAW IN INDIA VIS A VIS GENERATIVE AI

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INTRODUCTION

AI is poised to become a dominant technology across various industries, services, and governmental bodies. Numerous articles have been written discussing the advantages and potential drawbacks of this technology, with various international organisations such as UNESCO focusing on establishing ethical guidelines for its use. National governments are in the process of drafting regulations regarding the use of AI. The fascination with AI stems from its ability to generate materials for human decision-making and to autonomously make and carry out decisions. This is quite an innovative development. Traditional "Big Data Analytics" relied on human experts for decisions, while AI surpasses this approach. When analysing a new technology, it is crucial to start by using a "Technology value and risk model" to assess its potential benefits and drawbacks in relation to its features and intended uses. In the past, we have witnessed the emergence of numerous technologies that eventually led to significant global issues due to a lack of early threat recognition and proactive measures. Some examples are nuclear power plants built in seismically active places, facilities for storing radioactive waste in politically dangerous zones, and Zeppelins that carry hydrogen fuel. Numerous types of dangers exist as a result of technological advancements. A major worry is the potential for evil actors to abuse technology. Positive and bad uses may coexist with every technology.[5]

The dominant principles ingrained in a society determine what is considered undesirable. The usage of surveillance cameras is a contentious technological practice. People in certain countries strongly oppose this practice because they

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think it invades their privacy, while people in other countries proudly boast about how this technology has improved their country's security. A second category of dangers arises from technological shortcomings, such as when the system isn't working properly and produces biassed or inaccurate findings. The third category of dangers entails unintended consequences. Side effects can arise unexpectedly, encompassing various social or environmental factors, and might manifest shortly after a new technology is introduced or after prolonged use. Notable instances include the displacement of certain professions due to technological advancements, environmental contamination caused by industrial and vehicular emissions, hazardous materials generated by nuclear power plants, and the accumulation of plastic waste from everyday goods. In the upcoming sections, we will provide a brief overview of fundamental AI technologies, different application categories, and delve into the potential risks and benefits of AI.[6]

AI TECHNOLOGIES

In the last several decades, using algorithms, neural networks, or a mix of the two has proven a very successful way to build AI solutions. In order to identify a specific item or event, especially ones with established properties, algorithmic solutions sometimes integrate many methods. They have a hard time recognizing different kinds of things or happenings. Neural networks, on the other hand, may be taught to identify complex patterns in data. Layers of neurons are used to build neural networks. During training, the neural network establishes connections between each neuron in one layer and every neuron in the layer below it. All of the input values and a bias value are used by each neuron to calculate its output value. All digital computers are based on logic gates, which may be associated with neurons having certain features. Hence, neural networks have the capability to perform various computations. Users train the networks using data and feedback on result accuracy, rather than writing application code. There exist various types of neural networks and possible combinations among them. Additionally, different neural networks make use of different quantities of neuronal layers. Using multi-layer neural networks,

ISSN (O): 2584-2196

sometimes referred to as deep neural networks, may handle complex issues. While the lower levels focus on more concrete and particular aspects of the incoming data, the higher layers explore a hierarchical structure of more complex and abstract ideas. When it comes to a number of tasks, deep learning models are superior than shallow ones. Nevertheless, it wasn't until around 2005 that the methods were refined to enable learning in these networks. Both supervised and unsupervised learning methods are applicable to these networks. Medical pictures, voice or language patterns, and behavioural patterns are just a few examples of the many image kinds that have yielded impressive pattern recognitions. In many ways, neural networks are just algorithms that mimic the way the human brain functions by learning from examples provided in training data. No simple mathematical formula can adequately represent these facets of training. In addition, Specialised hardware units like Tensor Processing Units (TPUs) exist to make neural network machine learning more efficient. Unfortunately, this means that explaining the final judgement made by a neural network is next to impossible. A major issue is making sure that neural networks can accurately classify data. Absolutely! Algorithms used to train neural networks may benefit from the same best practices that guarantee safe software development. The complexity of huge neural networks surpasses that of a simple algorithm due to the enormous number of neurons and connections. We are not talking about neural networks when we talk about algorithms in this piece. It is feasible for algorithms of this type to go back and reconsider their final choice. However, neural network issues will arise in any combination of algorithms and networks. Every software can produce inaccurate outcomes because of coding mistakes, but neural networks face the added challenge of relying on the quality of the training data for their proper functioning. Choosing the training data can result in incorrect classifications because certain object classes may be left out or adversarial examples may be included. Typical datasets used to train neural networks for identifying handwritten numbers from 0 to 9 consist of 60,000 training images. Often, the best approach is to utilise extensive datasets to evaluate the systems post-training, ensuring that the test sets differ from the training sets. Encountering adversarial examples may result in incorrect classifications despite showing a strong confidence in the

ISSN (O): 2584-2196

classification. All the instances provided focus on images, and the authors attribute the problems to computer vision architectures. When it comes to generating fresh perspectives, the choice of training data has the potential to produce highly skewed outcomes. When examining the search for new medical treatments using a database primarily consisting of patients from a specific gender or ethnic group, there is a risk of developing treatments that may not be as effective for patients outside of that group.[7]

AI APPLICATIONS

AI offers a wide range of potential applications, which can be broadly categorized into reactive and creative applications. Reacting to input data involves categorizing it as a particular object or event and then taking appropriate action based on this classification, advising a human on how to respond, or sharing the classification outcome with a human. Direct action is typically employed when an immediate response is required without the need for human intervention in the decision-making process. For instance, automatic brake systems in cars, automatic cyber defense systems, and fully autonomous systems like drones and robots. Guidance or sharing classification outcomes with a person are commonly utilized in expert support systems. Innovative approaches produce a fresh set of results from a given set of information. For instance, tasks may include translating languages, developing plans for new materials with desired properties, predicting protein structures from genetic sequences, devising innovative technical solutions, or producing new works of art. Multiple neural networks are frequently utilized, including classification systems for reactive systems and deep neural networks. Engaging in a unique role play with generative adversarial networks (GANs). One common application involves training one neural network to recognize a particular category of items, such as a specific genre of artwork, while another neural network generates similar artwork. Once the classification network has taught the inventive network to the point when it cannot differentiate between the actual items and those that have been intentionally made, the training process ends.[8]

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Here, artificial intelligence generates artwork that is indistinguishable from established art. Some innovative methods have been developed to enhance GANs, allowing them to create unique art pieces that deviate from traditional styles while staying true to the original art distribution. The authors refer to their system as a creative adversarial network (CAN). Their aim is to produce original pieces, while ensuring they are not too unconventional to cause rejection. Furthermore, the novel art will exhibit heightened stylistic ambiguity, making it challenging to categorize within an existing art style. According to the authors, human subjects were unable to differentiate between the artificial art and human-created art in their tests. They also rated the AI-generated art higher on different scales. Exploring innovative approaches may involve integrating traditional computer modelling with AI technology. Usually, AI systems take charge of the standard computer modelling and database search for good places to start. Artificial intelligence solutions that make use of the AI technologies described earlier are able to satisfy the needs of matching AI applications. In most cases, a specific use case is met by each solution.

OPPORTUNITIES AND THREATS

As previously discussed, the risks and benefits depend on the technology utilized and the application's specified criteria. If the technology does not meet the requirements of the application, it may not be suitable for the selected purpose, but it could be useful for a different application. Therefore, there are typically a variety of applications that provide chances for a specific technology. This group may evolve as technology advances, new technologies emerge, new applications are introduced, and older applications become obsolete. The majority of opportunities for AI solutions fall into the following categories:

"• Systems for monitoring/surveillance with fast reaction — industrial and public safety and security

• Autonomous systems — Robots, drones, unmanned vehicles (aerial, submarine, in the street)

• Expert support systems — Medical, business, administrative, analyzes and juristic, political

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- Creative systems to find new solutions — Medical treatments, new technologies, new

materials, new art."

Threats can be grouped into:

"• Using AI for a "bad purpose". What is a bad purpose depending on the accepted ethic which itself may be different for different cultures and different groups within a culture. UNESCO tries to define globally accepted ethic rules for AI, but whether all points of the final definition will be accordingly applied by all its member states is another question.[9]

- Inherent failures of AI applications, i.e., systems not properly working, causing wrong or biased results.

- Unintended, and possibly unexpected, side effects from the application of AI technology."

We shall now examine the following types of threats and opportunities in relation to each of the aforementioned four categories of opportunities:

SYSTEMS FOR MONITORING/SURVEILLANCE WITH FAST REACTION

Public and commercial spaces alike may benefit from these systems' increased security measures. Examples include cyber-attacks on vital infrastructure production, cyber-physical system automation to avoid failures, and autonomous braking systems in automobiles to avoid or lessen the impact of accidents. The possibility of automated assaults on cyber- physical systems and the discovery of security flaws in such systems via the exploitation of comparable systems is real. The primary motivation behind the development of automatic cybersecurity systems was the need for rapid responses to machine-driven attacks. It is possible for AI systems to have inherent failures due to programming or training errors. In the most basic scenario, this implies that the systems fail to identify the crucial event and do not

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respond. However, the potential impact could be significantly greater due to the possibility of human reliance on automated responses. Conversely, an erroneous alert with automatic brake systems can lead to accidents that would otherwise be avoided. Dealing with cyber-defense systems might cause businesses to lose money and put a stop to their activities. It is crucial to test these AI systems extensively to ensure they do not malfunction. It is important to ensure that the test cases are different from the training data to detect any omissions in the training sets.[10]

Autonomous systems

Various versions of autonomous systems, such as industrial robots, drones, and unmanned vehicles, are utilized across a wide range of fields. There are new opportunities for drones and unmanned vehicles in markets that were previously inaccessible or too risky for human involvement. Searching for survivors after natural catastrophes, inspecting underwater projects, and ensuring the safety of buildings are all crucial sectors. Shipping small packages with drones is a promising industry with a lot of potential. The main applications of robots in the modern world are in healthcare and industrial production. Protecting people around a mobile robot and organizing help for the sick or old in an emergency (by notifying medical personnel, for example) are two important uses of AI categorization systems. There are concerns about the potential misuse of drones and unmanned vehicles for carrying out terror acts, such as locating and targeting individuals or objects for destruction using explosives or poisons. Drones have the capability to autonomously locate and track an object. Without human intervention, a completely autonomous system will follow out its instructions. In other instances, these dangers have already materialized. A case in point was the January 3, 2020, drone attack that killed an Iranian officer. On November 27, 2020, while no one was around, an assassination attempt was launched on Iran's top nuclear scientist using a remote- controlled weapon supported by artificial intelligence. In these actual instances, a remote worker was able to avert attacks on innocent people by using a webcam to identify the victim. Other factions may use completely autonomous systems along the road.

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Robots, drones, and unmanned vehicles face risks such as incidents caused by AI systems failing to operate properly as a consequence of incorrect programming or insufficient training of neural- network based units.[11]

EXPERT SUPPORT SYSTEMS

Analyses in the fields of medicine, commerce, law, administration, and politics all make use of expert support systems. Almost every industry makes use of them. The outcome is ultimately decided by a human expert, who may be significantly swayed by the AI system's findings. One major benefit of utilizing AI systems is that a single expert can efficiently manage a higher volume of cases within a shorter timeframe, while also analyzing a greater amount of data per case compared to not using such systems. It's challenging to clearly define the direct abuse of expert support systems. Data is processed and analytical findings are sent to the expert using an expert support system. It would seem that the expert's conclusion is well-grounded if all the facts used are lawfully available to them. The monitoring of public spaces is one kind of expert assistance system that generates a lot of controversy. Anyone taking part in public protests or keeping tabs on political opponents may be located using this system, in addition to the criminals already on the list. Identifying individuals through images is incredibly effective with AI-based systems. Aside from utilizing data that was obtained unlawfully, there is also the potential to intentionally manipulate the system by using a limited data set to produce a biassed outcome that supports the expert's final decision. There are risks associated with relying on restricted databases and mistakes in training the AI system. This might lead to an incorrect decision by the professional. Given that expert support systems are utilized to make decisions on critical matters affecting individuals, the risk of incorrect decisions is a significant concern. Considerations include medical diagnoses, employment decisions, insurance claims, and various other choices that can have a substantial impact on an individual's current and future circumstances. Furthermore, incorrect or heavily one-sided judgements could result in significant repercussions for businesses and nations that rely on these systems to facilitate negotiations. Once more, it is imperative to conduct thorough testing of AI systems.

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CREATIVE SYSTEMS

Novel materials, state-of-the-art medical gadgets and therapies, and one-of-a-kind artwork are already being created using innovative techniques. Thomas B. Ward stressed in his writings on creativity and business that creative solutions are not created from scratch but rather are the result of fusing ideas or information from other domains. Through his work with student groups, he found that greater degrees of abstraction lead to more creative solutions when combining ideas, whereas lower levels of abstraction provide more answers that resemble pre-existing ones. Utilizing AI to create novel solutions depends on its capacity to take deep learning to a more abstract level and analyze data from a variety of sectors utilizing cutting- edge technology. Beyond producing art, CANs may be able to provide creative answers to commercial problems in the future. They may even be able to replace human entrepreneurs with robots that can use deep learning and large datasets. Taking advantage of creative processes might result in a dearth of art in a certain style, which would lower its worth, and a proliferation of phony news items that seem like the genuine thing. This also includes creating fake photos and films to damage competitors' or rivals' reputations. When developing novel medical treatments or equipment, there are hazards associated with utilizing excessively skewed data, such as when data from a single gender or ethnic group is exclusively used. For those who don't fit the selected gender or ethnic group, this might result in less than optimal or even bad consequences. Again, extensive testing of AI systems is essential.[12]

SIDE EFFECTS

Unintentional side effects might result from a variety of social or environmental circumstances. They might show up soon after a new technology is released or after it has been in use for a long time. We are left with only conjecture on these consequences; we have to wait and watch what really happens. One such effect would be the elimination or significant decrease of employment prospects in certain industries. This is a well-known occurrence in the realm of industrial automation, where it mostly destroyed low-skill positions. There's a good chance that AI will also replace high-skilled employment. Expert assistance

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systems may increase productivity and efficiency to the point that a single person can assess more instances, which may reduce the number of experts needed. This risk is expected to be higher for back-office positions where the expert just reviews cases and does not engage directly with customers, like analyzing insurance claims. In the medical industry, where healthcare professionals like physicians and nurses work, the emphasis is not so much on job reduction as it is on increasing efficiency to improve the quality of services. This is because other variables are more important in influencing the workload of healthcare professionals. The development of AI solutions will undoubtedly lead to the creation of many new employment possibilities, but these positions are anticipated to be quite different from the ones that AI will replace. As a result, considerable retraining programmes will probably be needed. Given the creative AI solutions, it's feasible that many new AI professions may disappear in the far future as AI develops to the point where it can come up with answers on its own. These technological developments may have a big societal effect by changing job prospects and making society more dependent on artificial intelligence. Deep neural networks and large datasets combined with AI seem like a promising and worrying way to create novel answers for a range of problems.[13]

CONCLUSION

Analyzing the potential benefits and risks of AI solutions reveals numerous opportunities for leveraging modern AI technologies to enhance public safety, industrial security, and disaster response efforts. These technologies can facilitate in-depth analyses across various domains, develop innovative medical treatments, engineer advanced materials, pioneer cutting-edge technologies, inspire artistic creations, and drive innovative business strategies. Nevertheless, there is a potential for significant misuse of the technology, along with inherent dangers and potential negative social consequences. Since AI systems depend so much on the training data used for neural networks, the main issue with these technologies is the difficulty in determining the reasoning behind their final conclusions. The best way to tackle this problem right now seems to be to test the AI systems extensively with data that is different from the training data.

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However, broad conventional software system testing is notoriously difficult to pull out. Once the product has been used for some time, errors tend to become more apparent. Because the software system is so complex, there is a difficulty. Big neural network based systems, on the other hand, can be more complicated than the average software system today. There are clear requests to ensure appropriate operations, respect human dignity, compensate for mistakes, and incorporate checks throughout the creation and usage of AI systems when one examines the UNESCO conference' talks on developing AI ethical norms. In addition, there are calls for increased education on AI and for broad access to these technologies. It is possible that some of the requests have competing priorities. For example, if you're looking to educate the public and get wide access, it can limit your alternatives for making sure everything works well and meeting other ethical demands. Due to the open-source nature of robot operating systems and machine learning platforms, the widespread availability of affordable and small-sized Tensor Processing Units, and UNESCO's request, individuals or small groups can now develop and use AI solutions autonomously. From terrorist groups utilising drones for attacks to individuals relying on AI systems for personal decisions, the potential for disastrous outcomes due to poorly trained systems is a significant concern. When thinking about the lasting consequences of AI, it's crucial to not only focus on the effects on the job market but also on the potential increase in reliance on AI across various sectors of society. The advancement of deep learning with innovative solutions in various fields such as art and business has the potential to impact numerous aspects of our society.[14]

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REFERENCES

1. D. Nimmer, Copyright – Sacred Text, Technology and the DMCA, (1st ed., 2003)
2. N. Elkin-Koren, Cyberlaw and Social Change: A Democratic Approach to Copyright Law in Cyberspace, 14, Cardozo Arts & Entertainment Law Journal, pp.215–296, 1996, available at http://www.cardozoaelj.com/wpcontent/uploads/2013/04/elkinkorren.pdf.
3. S. Balganesh, The Normative Structure of Copyright Law, 313 in Intellectual 262 Property and the Common Law (S. Balganesh, 1st ed., 2013).
4. T. K. Armstrong, Digital Rights Management and the Process of Fair Use, 20(1), Harvard Journal of Law & Technology, pp.49-122, 2006, available at http://scholarship.law.uc.edu/fac_pubs/146.
5. M. A. Carrier, The Pirate Bay, Grokster, and Google, 15(1), Journal of Intellectual Property Rights, pp.7–18, 2010, available at http://nopr.niscair.res.in/bitstream/123456789/7195/5/JIPR%2015(1)%20(7-18).pdf
6. P. Chakraverty, Effective Applicability of Sections 65A and 65B of Copyright (Amendment) Act, 2012 using Case Study of Digital Watermarks, 20, Journal of Intellectual Property Rights, pp.388–397, 2015, available at: http://nopr.niscair.res.in/bitstream/123456789/33584/1/JIPR%2020(6)%20388 - 397.pdf
7. S. Dusollier, Electrifying the fence : the legal protection of technological measures for protecting copyright, European Intellectual Property Review, pp.1–17, 1999, available at: http://www.crid.be/pdf/public/4138.pdf.
8. W. Fisher, Theories of Intellectual Property, available at https://cyber.law.harvard.edu/people/tfisher/iptheory.pdf.
9. J. Gupta, John Doe Copyright Injunctions in India, 18(4), Journal of Intellectual Property Rights, pp.351–359, 2013, available at: http://nopr.niscair.res.in/bitstream/123456789/20289/1/JIPR%2018%284%29 %20351- 359.pdf
10. J. Litman, Copyright, Compromise, and Legislative History, 72, Cornell Law Review, pp.857–904, 1987, available at: http://repository.law.umich.edu/cgi/viewcontent.cgi?article=1223&context=articles