

Intersection of Intellectual Property Rights and AI

Gauri Naraian¹, Ms. Anupam Sinha²

¹Law Student, 2nd Year LLB, Amity University, Patna

²Assistant Professor, Amity Law School, Amity University, Patna

Abstract

Artificial intelligence is a computer science field that studies and develops intelligent machines. These machines are able to think, learn and solve problems similarly to humans. AI goals include computer enhanced learning, reasoning and perception. AI systems can process information, identify pattern and make decisions autonomously. The progression of data science and computing has simplified the decision making process. It is used across different industries, from finance to healthcare. Deep learning is a method in AI that teaches computers to process data in a way that is inspired by the human brain.

AI technology has widespread applications across various field, including speech recognition, surgical robots, image analysis, autonomous vehicles and natural language processing. It is reshaping industries such as business, finance, chat bots, robotics, cyber security, manufacturing, health, education, transport, farming and public administration.

Introduction:

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#AI GENERATED INVENTIONS AND PATENTABILITY:=

The patentability of AI generated inventions raises complex questions in law and policy. AI created inventions such as applications or devices created by smart computers can perform difficult tasks autonomously. They keep learning and improving themselves over time. Courts and patent offices have rejected applications for AI generated inventions, with a few exceptions. This is because the patent law is based on the assumption that inventors are humans. Some government bodies and courts have also stated that inventions made with the help of AI cannot be patented.

An American scientist and inventor Dr. Stephen Thaler, created an AI system called DABUS (device for the autonomous bootstrapping of unified sentence). DABUS is a type of connectionist AI. It uses multiple

neural networks to generate new ideas, the novelty of which is then assessed by a second system of neural networks. Through this process DABUS has autonomously generated two inventions. The first was factual container (a food container) and the second was neural flame a search and rescue beacon. DR. thaler patent applications have been unsuccessful in new zealand, Taiwan, Israel , The Republic of korea , Canada, Brazil and India. To date South Africa and Saudi Arabia are the only exceptions although in both of those jurisdiction the patents have not yet undergone substantive examination.

The inventorship issue of AI generated inventions has created problems for patentability. There is no clear cut criteria for deciding autonomously generated inventions by artificial intelligence (AI). AI systems are playing an increasingly important role in innovation . The question has been asked about how the patent system will protect AI generated inventions. The traditional patent laws have failed to distinguish between AI as a tool and AI as the primary developer of inventions. The big companies are ready for investment in AI development. But the uncertainty about patenting AI inventions could affect innovation and economic growth.

If AI inventions can't be patented there might be less investment in AI technology. Some propose placing AI generated creations in the public domain for open access and shared benefits. On the other hand there are arguments in favour of protecting the AI work through patents for AI inventions could potentially badly affect research and development. The use of AI in innovation introduces risks to trade secrets.

However the full court of the Australian federal court suggested a number of options regarding the inventorship of the relevant patents namely:

The owner of the machine upon which the AI software runs.

The AI software developer

The owner of the copyright in its source code

The person who inputs the data used by the AI to develop its output.

The UK intellectual property office consultation report year 2022 identified several options for patent law reform including.

Expanding the definition of inventor to include the humans responsible for an AI system that generates inventions.

Allowing AI to be identified as the inventor

Protecting AI devised inventions by means other than the patent system.

COPYRIGHT PROTECTION FOR AI CREATED WORKS:=-

There is an emergence of generative AI system like CHATGPT, BARD, DALL-E, Midjourney and stable diffusion which allow people to prompt AI to create literary, dramatic and artistic works. AI like humans can now create art, music by learning from data and patterns. As per existing copyright laws only humans are treated as creators. In one famous case Naruto vs Slater where a monkey took selfies and PETA claimed copyright to them the US ninth circuit court of appeals rejected the claim of the monkey as creator. So animals cannot own copyright. The authorship of a work is associated with the examination of originality and created input. The same is the hurdle to getting copyright for AI created work.

As far as EU copyright is concerned the work must be original. It must show the author's intellectual creation and personality. The law is silent about threshold of originality but emphasises the author's freedom and creative choices. It must have a personal touch. In most European countries the work that is human created gets copyright. Only the AI generated work that has a human author's impact on the

outcome is copyrighted. It may not be copyrighted. It may not be copyrighted if the AI created work not meet sufficient threshold of originality.

Midjourney an tool serves as an example of generative AI used for generating images from natural language descriptions. Midjourney raises new questions about copyright use. Generative AI mainly uses text based artificial intelligence to create diverse content. GAI models use vase textual input data for learning. It analyses input data patterns to answer user queries. Unauthorised copying and use of data is treated as copyright infringement. GAI's use of input works for training raises questions about whether its permitted or constitutes the preparation of a derivative of work.

Getty images vs stability AI is a classic example of fair use defence. The legal framework for GAI related IP issues is vague. It significantly impacts the growth of the generative AI industry and intellectual property law in this evolving landscape underscores the need for a comprehensive legal understanding of how GAI interacts with copyright law.

#AI AND TRADEMARK :=

AI algorithms serve the following primary purposes.

AI in trademarks helps applicants register trademarks more easily by suggesting ways to improve applications.

It identifies conflicts between new trademark and existing rights to prevent potential legal issues.

AI plays a crucial role in simplifying trademark processes and ensuring successful registrations.

In trademark law enforcement, AI is instrumental in spotting unauthorised online use including social media infringement.

So far there is one famous case involving the intersection between AI and trademark known as lush vs amazon in this case amazon was found guilty of trademark infringement against lush keyword google. It caused people searching for lush to be directed to amazon. Amazon's AI system suggested similar products, which led to the court ruling that amazon was responsible for infringement.

In e- commerce, the increasing uses of AI raises concerns about brand manipulation. As AI takes more consumer like role, legal battles may intensify. Courts might need to adapt traditional concepts such as the average consumer and likelihood of confusion for AI involvement. Due to the involvement of AI in online product ordering the retail models. Still there is a strong emotional connection between consumers and brands.

#Data ownership and AI development:=

In the digital age, data and AI play central roles in various fields. Data is often compared to oil for its value in decision making and innovation. AI need extensive dataset to transform raw data into meaningful insights. The quality and accuracy of data are crucial for achieving business success. AI models heavily rely on the integrity of the input data to generate reliable output. Organised and searchable structured data becomes the foundation for the prediction of emerging trends . Unstructured data provides valuable insights that drive innovation and competitive advantage. Privacy concerns and ethical considerations are important issues in data usage in AI systems.

Adaptation to evolving data patterns and maintaining relevance, continuous monitoring and updates of AI algorithm are necessary. Collective efforts by data sharing organisations can lead to industry wide innovation. TO minimise the risk of cyber threats, cyber security measures must be robust to safeguard sensitive data.

GAI models like GPT-4 pose challenges in terms of data ownership and privacy. Privacy related issues include data biases, mishandling risks, and potential identity theft. Privacy can be invaded by AI's ability to generate realistic images and manipulative misleading material. Advanced AI voice technology increases the risk of impersonation and deception. Privacy rights may be compromised due to lack of clear consent mechanisms and transparency. To safeguard privacy, there is a need for strong regulations and legal framework.

Ethical considerations in AI and IPR:=

Ethical considerations AI and IPR are :

Algorithm bias and discrimination based on factors such as gender, race etc can occur when systematic errors in computer systems result in discriminatory outcomes affecting individuals based on protected characteristics.

The responsibility for AI infringement on IP rights for AI generated content is not clearly fixed by the laws.

To avoid ethical worries and prevent discrimination in AI work human control is a must.

AI systems should be adapted, considering technology gaps between countries to ensure fairness, transparency and accountability.

Present AI systems are unable to understand and incorporate emotional depth and

There is a risk of power concentration in the hands of a few who control AI Technology might raise ethical concerns about equity and access.

legal consideration in AI and IPR

Due to rapid evaluation of AI , traditional patent laws are facing challenges in determining inventorship , ownership and law enforcement.

There are different global views about the requirement of collaboration for organisation to establish legal frameworks and standard for AI technologies.

Worldwide use of AI in intellectual property offices IPOs is saving time for examiners expediting processes and enhancing trademark application procedures.

For AI adoption globally there is a requirement for legal framework addressing technology gaps, energy consumption and job creation challenges. Intellectual property laws are required to accommodate the evolving nature of AI generated content and inventions.

AI systems require vast data sets so legal framework are needed to regulate data sharing, responsible use and prevent misuse.