



Indian law and Vietnamese law on the patentability of inventions created by artificial intelligence

Le Thi Minh, Pham Khac Phuong

Department of Law, Cuu Long University, Vietnam

Abstract

The topic focuses on the patentability of AI-based inventions under the laws of India and Vietnam. Specifically, the topic considers the above countries' legal provisions and specific patent situations. On that basis, the topic comprehensively analyzes the patentability of inventions created by artificial intelligence. From there, the topic makes appropriate recommendations for protecting inventions created by artificial intelligence.

This is the result of the topic "Patent protection created by artificial intelligence under the laws of India, United Kingdom, and US experience for Vietnam supported by Cuu Long University research period 2024-2025"

Keywords: Patent, artificial intelligence, industrial property rights

Introduction

Artificial Intelligence (AI) has emerged as a significant technology transforming many aspects of life in recent years. With the increasing importance of AI-based inventions, the issue of patentability for inventions created by AI has become a topic of great interest and debate. Patent law plays a vital role in promoting innovation and protecting the rights of innovators. Patents are a form of intellectual property protection for innovators to prevent others from using their inventions for a certain period. However, the rapidly evolving nature of AI technology poses challenges to patent law, especially patentability criteria and the review of AI-based patent applications.

However, there are many issues with protecting inventions generated by AI, the two most significant of which are determining the inventor of the invention and whether the invention meets the criteria for inventiveness. As such, the patentability of AI-generated inventions remains a complex and unresolved legal issue. As AI develops and becomes more widespread, the patent system will likely need to adapt to account for this technology's unique challenges and opportunities.

Overview of artificial intelligence and the inventiveness of artificial intelligence

1. Overview of artificial intelligence

AI is one of the research areas in the field of computer science. Defining AI is challenging because AI technology is developing rapidly, and new research areas in AI are always being explored. AI ^[1] It has many sub-areas, and these sub-areas have their sub-areas ^[2]. The definition of AI has been discussed a lot, and there needs to be a consensus on how to define it ^[3].

The definitions of AI systems vary depending on the purpose, domain, subject matter, and other factors relevant to the AI system. In the 1950s, the fathers of the field, Marvin Minsky and John McCarthy, described AI as any task performed by a program or machine, if a human performs the same

In activities, people will have to use intelligence to complete tasks ^[4].

John McCarthy coined "Artificial Intelligence" and defined AI as "the science and engineering of making intelligent machines, brilliant computer programs ^[5]." Here, I focus on definitions related to patents because the question of AI involves invention. Matthew Scherer's definition of AI is most relevant: "[m]achines are capable of performing tasks that, if performed by a human, would be thought to require intelligence ^[6]." Indeed, this machine-generated intelligence perceives data from the outside world and decides what activities to engage in to maximize the probability of success in achieving its ultimate goal. Thus ^[7], AI has successfully created inventions that humans can create, but AI-generated inventions occur more efficiently. Furthermore, as AI develops, it becomes invaluable for solving specific problems and will improve human skills such as accuracy, speed, and the ability to process large amounts of data.

The Merriam-Webster dictionary takes a very general approach to technology. It defines AI as "a branch of computer science concerned with the simulation of intelligent behavior in computers" or "the ability of a machine to imitate intelligent human behavior ^[8]." The European Commission puts it in its 2018 Communication on "Artificial Intelligence for Europe ^[9]": "Artificial intelligence (AI) refers to systems that exhibit intelligent behavior by analyzing their environment and performing actions – with some degree of autonomy – to achieve a specific goal (...)" ^[10]. AI can be defined as "the ability of a digital computer or computer-controlled robot to perform tasks typically associated with intelligent organisms ^[11]." In September 2022, the UKIPO issued enhanced guidance to assist those seeking patents on AI inventions. The UKIPO defines AI as "technology capable of performing tasks that would otherwise require human intelligence, such as visual perception, speech recognition, and language translation."

AI can be briefly defined as a branch of computer science that studies intelligence properties by synthesizing intelligence ^[12]. What is known as AI is based on the implementation of mathematical methods or algorithms through computer implementations. These methods or algorithms are often capable of learning from data and processing data in a way that exhibits "intelligence ^[13]."

Many modern definitions of AI retain the original functional emphasis – a machine completing tasks that traditionally required humans ^[14]. "Intelligence". AI technology aims to develop systems that can perform as well as, or even better than, humans. As Marvin Minsky, one of the founders of AI science, said over fifty years ago, AI consists of software and technological tools that "behave in a way that presumably everyone would agree exhibits intelligence." Whether a machine qualifies as intelligent remains debatable, however.

A famous test to measure artificial intelligence is the Turing test ^[15]. To pass the test, a computer using AI must be able to answer a series of written questions posed by a human interrogator in a way that the interrogator cannot tell whether the answer came from a human or a computer ^[16]. The test has been criticized for needing more measurement by artificial intelligence and machine intelligence ^[17]. Despite the criticism, the Turing test is still relevant and used at least to test the performance of AI, but its usefulness is still a subject of debate ^[18]. The skills a machine must have to pass the Turing test are at least natural language processing, knowledge representation, automated reasoning, and machine learning ^[19].

Building on an understanding of the mathematical-statistical framework that underlies commonly classified AI systems, one author of this article, Shlomit Ravid-Yanisky, defines AI using at least eight key characteristics that distinguish AI systems from traditional software. The definition describes AI systems as (1) creative, (2) unpredictable, (3) independent and autonomous, (4) rational, (5) evolving, (6) capable of collecting and communicating data, (7) efficient and accurate, and (8) able to choose among alternatives ^[20]. These eight characteristics help establish a flexible and balanced framework for defining AI systems that are multidimensional in nature and function. When analyzing whether a computer system is AI-based, the satisfaction of some, if not all, of the characteristics can still make a system AI-like.

2. The Invention Potential of Artificial Intelligence

Because of the fundamental properties inherent in all AI programs, systems can perform new tasks creatively, autonomously, and without exact output predictability. For example, to generate a new solution, an AI system powered by a genetic algorithm can combine random mutations that produce unpredictable results for the optimal solution ^[21]. It can automatically choose from many expected results to optimize the solution by filtering out less desirable results ^[22]. The system will eventually arrive at the best solution by repeating the process. Machine learning, a type of AI, can learn from various data (e.g., images, videos, and sensory data) and look for patterns. It can also improvise by outputting new data that can fit existing patterns ^[23]. However, the AI developer may not know how the AI system was invented.

The involvement of computers in the creative process lies on a spectrum. At one end, the computer may be used simply as a tool to assist the human inventor without contributing to the creation of the invention. This may include a spell checker or a simple calculator at its most minimal. At the farthest end of the spectrum, the computer may automatically generate output that would be patentable if a human created it. The computer may be used to generate several possible solutions under human guidance.

In general, AI-related inventions can be classified as follows:

First, inventions related to AI technology. This involves developing one or more AI tools, such as new AI algorithms, or improving existing ones. Some standard machine learning algorithms include, but are not limited to, linear regression, gradient descent, logistic regression, support vector machines, and decision trees. This is the process of creating the artificial intelligence system itself.

Second, AI-enabled or AI-based inventions. These include innovations that use AI tools to implement some specific application. The innovation in such cases lies not in the AI tools used but in the use of AI to achieve a technical goal. Examples include facial recognition, language processing, and drug discovery.

Third, AI-generated inventions. This refers to coming up with an AI engine without any human intervention. One of the most famous examples of such inventions is DABUS. DABUS is an artificial intelligence system created by Dr. Stephen Thaler. DABUS has attracted attention in the context of patent law because it is designed to automatically generate inventions without direct human intervention. Although it is the first AI system listed as an inventor in a patent application, DABUS is not the first "invention machine" to generate inventions. Many AI systems have been claimed to have generated new inventions without human intervention.

Another example is John Koza's "invention machine," an AI system based on genetic programming modeled after biological evolution to optimize complex problems. John Koza won a patent at the USPTO for his "inventing machine." He received patents for inventions by the "inventing machine" related to methods and processes for creating new designs for industrial control systems ^[24]. Many experts and researchers claim that AI will be responsible for the fourth industrial revolution. Therefore, the law must be futuristic to adapt to technological advancements, as AI can invent independently ^[25].

Despite this, most scholars agree that AI cannot automatically define problems ^[26]. However, while computers are not yet capable of fully automated inventiveness ^[27], this is likely to emerge as AI undergoes rapid innovation due to the increasing availability of improved computational resources and advances in the development of Big Data. Breakthroughs in algorithm design increase the likelihood that computers will be able to invent autonomously shortly; for example, unsupervised training of deep neural networks allows computers to find connections between large amounts of unlabeled data without human operators defining rules. Furthermore, there has been a significant increase in activity in AI, from venture capital investments in startups to giant technology companies committing significant research budgets to the topic, which could further spur AI-based innovation ^[28].

3. Patent protection standards under Indian law

For an AI-related invention to qualify for patent protection, it must satisfy the essential legal conditions of novelty, inventive step, and industrial applicability, just like any other invention. The Indian Patents Act does not provide a definitive definition of what constitutes an invention. Instead, it provides a non-exhaustive list of "non-patentable inventions" under Section 3, specifically ⁶: "A mathematical or business method or a computer program or algorithm by

itself" is not patentable; and "a plan, rule or method of performing mental actions or a method of playing a game" is not patentable."

The Indian Patent Office (IPO) will examine patent applications and assess whether they meet the statutory requirements for patentability. Regarding AI-related inventions, the IPO takes a technology-neutral approach, treating them like any other invention. AI algorithms and software are not automatically excluded from patent protection. However, the invention must meet the patentability criteria, including novelty and inventive steps. The Indian Patent Act specifies the requirements for an invention to be eligible for patent protection. These requirements include novelty, inventive steps, and industrial applicability.

- **The invention must be novel:** An AI invention must be new and not previously disclosed to the public anywhere in the world before filing a patent application. Given widespread global AI research and development, proving novelty can be difficult for AI innovators.
- **The invention represents an inventive advance:** Also known as non-obviousness, this requires the AI invention to make an inventive leap beyond what is known or obvious to a person skilled in the art. This is a challenge in AI, where minor, incremental improvements are expected, making it difficult to demonstrate a significant inventive advance.
- **Industrial applicability:** The invention must be capable of being created or used in an industry. While many AI innovations have industrial applications, demonstrating this can still be challenging for particular AI inventions, especially those in new or specialized fields.

3.1. Patent protection procedures in India

Section 2 and Section 6 of the Indian Patents Act 1970 specify the criteria for recognizing an inventor as an individual who can apply for a patent in the jurisdiction of India. Section 2(p) of the Patents Act, 1970 defines a patentee as a person who is presently recorded in the register as a patentee of the owner of the patent. Section 2(t) defines an interested person as "a person engaged in or promoting research in the same field to which the invention relates."

Section 6(1) of the Patents Act provides that any of the following persons may apply for a patent:

- Any person who claims to be the authentic and original inventor of an invention;
- Any person who is an assignee of the person claiming to be the true and first inventor in respect of such right to apply;
- The legal representative of any deceased person has the right to apply immediately before death.

Thus, Indian law also emphasizes the role of the inventor, and since AI does not fit the definition of "individual" under various laws, AI cannot file on its own, nor can it appoint an individual to file on its behalf^[29].

3.2. Judgment of Indian competent authority on patent protection of inventions created by AI

The Controller General of Patents raised objections in the Examination Report of Thaler's Indian Patent Application, stating that the patent application could not pass formal and technical examination under Sections 2 and 6 of the Patents Act, 1970 – as DABUS was not recognized as an individual. The same is supported by several legal precedents, such as VB Mohammed Ibrahim v. Alfred Schafranek, where the Court held that neither a company nor a financial partner can be the sole inventor. The Court held that only an individual who has contributed his skills and knowledge to the innovation can legitimately claim patent rights.

Another Indian case law also reinforces this view. In the case of Som Prakash Rekhi v. Union of India & Anr, the Supreme Court of India decided on what constitutes a "person" in the eyes of the law. The judgment concluded that an individual is a person whom the law considers to have a "personality." This personality can be extended to a legal entity, where a legal entity has the right to sue or be sued. In essence, an AI cannot exercise any rights, nor can it independently perform the mandatory duties of any legal entity^[30].

Patentability of AI-generated inventions under Vietnamese law

1. Patent protection standards under Vietnamese law

Article 4.12 of the 2005 Law on Intellectual Property (amended and supplemented in 2009, 2019, 2022) stipulates that "an invention is a technical solution in the form of a product or process intended to solve a specific problem by applying natural laws." Article 58.1 of the Law on Intellectual Property stipulates that "an invention is protected in the form of a Patent for Invention or a Patent for Utility Solution."

Article 16.3.b Circular 23/2023/TT-BKHHCN stipulates technical solutions as follows:

1. A product in the form of an object, for example, a tool, machine, device, component, circuit, represented by a set of information identifying an artificial product characterized by technical signs (characteristics) of the structure that product has a function (use) as a means to meet specific human needs; or a product in the form of a substance (including simple substances, compounds and mixtures of substances), for example, a material, substance, food, pharmaceutical product, represented by a set of information identifying an artificial product characterized by technical signs (characteristics) of the presence, proportion and state of the elements, that has a function (use) as a means to meet specific human needs; or a product in the form of a biological material, for example, a gene, a genetically modified plant/animal, represented by a set of information about a product containing genetic information modified under human influence, capable of self-reproduction.
2. A process (technological process; diagnostic, forecasting, testing, processing method) is represented by a set of information that determines how to carry out a process or a specific job, characterized by signs (characteristics) of the sequence, conditions, participants, measures, and means of performing operations to achieve a specific goal.

Article 58.2 of the Law on Intellectual Property stipulates that an invention is protected in the form of a Patent if it meets the following conditions:

▪ **There is novelty**

An invention is considered novel if it does not fall into one of the following cases: (i) It is publicly disclosed in the form of use, written description, or any other form domestically or abroad before the filing date of the patent application or before the priority date in case the patent application enjoys priority; (ii) It is disclosed in another patent application with an earlier filing date or priority date but is published on or after the filing date or priority date of that patent application.

An invention is considered not publicly disclosed if only a few people know about it and are obliged to keep it secret.

An invention shall not be considered to have lost its novelty if it is publicly disclosed by the person entitled to register it or by a person who has obtained information about the invention directly or indirectly from that person, provided that the patent application is filed in Vietnam within twelve months from the date of disclosure. This provision also applies to inventions disclosed in an industrial property registration application or an industrial property protection certificate published by the state management agency of industrial property in cases where the publication is not by the provisions of law or the application is filed by a person who is not entitled to register it.

▪ **Have creative skills**

An invention is considered to have an inventive step if, based on technical solutions that have been publicly disclosed in the form of use, written description, or in any other form domestically or abroad before the filing date or before the priority date of the patent application in case the patent application enjoys priority, the invention is an inventive step that a person with average knowledge in the relevant technical field cannot easily create.

▪ **Has industrial applicability**

An invention is capable of industrial application if it is possible to manufacture, mass produce the product, or repeatedly apply the process that is the subject matter of the invention and obtain stable results.

An invention is protected as a Utility Solution Patent if it is not common knowledge and meets the conditions of novelty and industrial applicability.

In addition, Article 59 of the Law on Intellectual Property stipulates that the following subjects are not protected under the name of inventions, including Inventions, scientific theories, mathematical methods; Diagrams, plans, rules and methods for performing mental activities, training animals, performing games, doing business; computer programs; Ways of expressing information; Solutions with only aesthetic properties; Plant varieties, animal varieties; Plant and animal production processes that are mainly biological and not microbiological processes; Methods of preventing, diagnosing and treating diseases for humans and animals.

3. Procedures for filing a patent application

The procedure for registering for patent protection is mainly regulated in Decree No. 65/2023/ND-CP. In particular, the patent registration form requires information about the inventor. The inventor does not necessarily have to be the applicant, but the application form must show information about the author. The required information includes personal information: Name, address, phone number,

nationality, and email. Information about the inventor is mandatory in the procedure for applying for protection.

Article 122 of the 2005 Law on Intellectual Property (amended and supplemented in 2009, 2019, 2022) stipulates the inventor as follows:

- The inventor is the person who directly creates the industrial property object; if two or more people create the industrial property object, they are co-authors of the invention.
- The author of an invention has personal rights and property rights. The personal rights of the inventor include the right to be named as the author in the Patent of Invention and the Patent of Utility Solution, as well as to be named as the author in documents announcing and introducing the invention, industrial design, and layout design. The inventor's property rights include the right to receive remuneration according to the provisions of the Law on Intellectual Property.

Policy comments and recommendations regarding patent protection of AI-generated inventions

1. Comments on the patentability of AI-generated inventions in India and Vietnam

Despite the differences in the legal systems of the UK, the US, and India, the common goal of these countries is to identify who is responsible, in whole or in part, for what can be patented. In this context, the laws of the above countries exclude AI systems now and shortly while focusing on the contribution to the creation of the invention. All the jurisdictions studied grant patents when identifying the inventor as a human, which is also the core of the concept of creativity. This key point distinguishes human inventions and inventions created by advanced technology by random luck rather than genuine creative effort. The issue of identifying the inventor is critical, as it relates to the issue of ownership of the invention created.

The requirement that the inventor be an individual is designed to protect and recognize the rights of a human inventor. However, inventors do not necessarily own their patents. Ownership can be transferred from an individual to a legal entity through an assignment agreement or other means provided by law. For example, in many jurisdictions, ownership automatically passes to the employer if an invention is made under an employment relationship. Even if an inventor does not own the patent, the law requires that at least one inventor be named to ensure their creative work is recognized correctly. National patent laws are created, so they need to consider the future inventiveness of machines^[31].

On the issue of whether the owner of an AI system can still own any inventions created by the AI, the countries' laws all hold that there is no basis to assume that the owner of the AI system will be the owner of the invention created by the AI. However, the competent authority also does not prevent a person from claiming to be the inventor when using AI in creating an invention. The competent authority must also consider whether technical advances created by fully autonomous AI are patentable.

2. Policy recommendations regarding patent protection of AI-generated inventions

Patent protection for AI-generated inventions will encourage innovation. The prospect of holding a patent will not directly promote AI, but it will encourage developers

and users of AI. This will spur the development of innovative AI systems, ultimately bringing more innovation to society.

Additionally, patents can promote the disclosure of information and the commercialization of socially valuable products. Patents for AI-generated inventions help achieve these goals, like any other patents granted to humans. Conversely, not allowing protection for AI-generated inventions means that in the future, businesses may not be able to use AI to invent, even if the resulting use of AI is more effective than humans at solving specific problems. This also helps limit fraud in the patent process by not claiming that a filing is based on an AI-generated invention. It is essential to put in place appropriate policies to address AI-generated works. Today, creative AI may be a relatively insignificant part of innovation in economic terms. However, AI is improving exponentially, while human researchers still need to. Creative AI could become a significant part of research and development in the short to medium term. When that happens, it will be problematic if we lack clear rules about whether AI-generated inventions are protectable, who or what should be listed as the inventor, and who owns those inventions.

References

1. Nils J Nilsson. *The Quest for Artificial Intelligence: A History of Ideas and Achievement*, Cambridge University Press, 2009.
2. Stuart J Russell, Peter Norvig. *Artificial Intelligence: A Modern Approach*, Publishing House, Pearson, 2009, 1–3.
3. Wolfgang Ertel. *Introduction to Artificial Intelligence*, Springer, 2011, 1–5.
4. Michael Negnevitsky. *Artificial Intelligence: A Guide to Intelligent Systems*, Pearson Education Canada, 2011, 1–4.
5. George F Luger. *Artificial Intelligence: Structures and Strategies for Complex Problem Solving*, Pearson, 200, 1–2.
6. Nick Heath. What is WHO? Everything you need to know about Artificial Intelligence, ZD NET, 2018. <https://www.zdnet.com/article/what-is-ai-everything-you-need-to-know-about-artificial-intelligence/>, accessed November 7 /2024.
7. John McCarthy. What is Artificial Intelligence?, 2007. <http://jmc.stanford.edu/articles/whatisai/whatisai.pdf>, accessed November 7, 2024.
8. Matthew U. Scherer. "Regulating Artificial Intelligent Systems: Risks, Challenges, Competencies, and Strategies," *Harvard Journal of Law & Technology*, 2016:29:353, 362.
9. Dr. Shlomi Yanisky Ravid, Xiaoqiong (Jackie) Liu. "When Artificial Intelligence Systems Produce Inventions: An Alternative Model For Patent Law At The 3A Era", *Cardozo Law Review*, 2018:39:2215, 2226.
10. European Commission. *Legal provisions of COM (2018) 237- Artificial Intelligence for Europe*, 2018. https://www.eumonitor.eu/9353000/1/j4nvdfcs8bljza_j9vvik7m1c3gyxp/vknuqtbtbx4zb, accessed November 7, 2024.
11. Copeland BJ. "Artificial Intelligence - Alan Turing and the Beginning of AI". *Encyclopedia Britannica*, 2019. www.britannica.com/technology/artificial-intelligence/Alan-Turing-and-the-beginning-of-AI, accessed November 7, 2024.
12. P Stone, *et al.* "Artificial Intelligence and Life in 2030", *One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel*, Stanford University, Stanford, CA, 2016, 13. https://ai100.stanford.edu/sites/g/files/sbiybj9861/f/ai100report10032016fnl_singles.pdf, accessed November 7, 2024.
13. P Stone, *et al.* "Artificial Intelligence and Life in 2030", *One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel*, Stanford University, Stanford, CA, 2016, 13, https://ai100.stanford.edu/sites/g/files/sbiybj9861/f/ai100report10032016fnl_singles.pdf, accessed November 7, 2024.
14. Stuart J Russell, Peter Norvig. *Artificial Intelligence A Modern Approach*, Pearson Publishing House, 3rd ed, 200.
15. AM Turing. *Computing Machinery and Intelligence*, Oxford University Press on behalf of the Mind Association, 1950. <http://www.jstor.org/stable/2251299?origin=JSTOR-pdf>, accessed November 7, 2024. 6
16. Stuart J Russell, Peter Norvig. *Artificial Intelligence A Modern Approach*, Pearson, 3rd ed., 2009, 1–3.
17. Stuart M Shieber. *Lessons from a Restricted Turing Test*, 1994, 37(6), <https://www.eecs.harvard.edu/~shieber/Biblio/Papers/loebner-rev-html/loebner-rev-html.html>, accessed November 7, 2024.
18. Kenneth Ford, Patrick Hayes. *Turing Test Considered Harmful*, *IJCAI*, 1995:95(1):972–977.
19. Robert French. *Moving beyond the Turing Test*, 2012, (55)12. https://www.researchgate.net/publication/262363735_Moving_Beyond_the_Turing_Test, accessed November 7, 2024. Robert Epstein, Gary Roberts and Grace Beber (2008), *Parsing the Turing Test: Philosophical and Methodological Issues in the Quest for the Thinking Computer*, Publishing House. Springer (2008).
20. Stuart M Shieber. *The Turing Test: Verbal Behavior as the Hallmark of Intelligence*, Publishing House. MIT Press, 2004.
21. Stuart J Russell, Peter Norvig. *Artificial Intelligence A Modern Approach*, Pearson, 3rd ed., 2009, 1–3.
22. Shlomit Yanisky-Ravid, Regina Jin. "Summoning a New Artificial Intelligence Patent Model: In the Age of Pandemic," *Michigan State Law Review*, 2021, 3. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3619069, accessed November 7, 2024.
23. Shlomit Yanisky-Ravid, Regina Jin. "Summoning a New Artificial Intelligence Patent Model: In the Age of Pandemic," *Michigan State Law Review*, 2021, 3. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3619069, accessed November 7, 2024.
24. Shlomit Yanisky-Ravid, Regina Jin. "Summoning a New Artificial Intelligence Patent Model: In the Age of Pandemic," *Michigan State Law Review*, 2021, 3, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3619069, accessed November 7, 2024.
25. Shlomit Yanisky-Ravid, Regina Jin. "Summoning a New Artificial Intelligence Patent Model: In the Age of Pandemic," *Michigan State Law Review*, 2021, 3,

- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3619069, accessed November 7, 2024.
26. Schwein Rachel L. "Patentability and Inventorship of AI-Generated inventions", *Washburn Law Journal*, 2022;60:561-604. 2
 27. Ramalho A. *Intellectual Property Protection for AI-Generated Creations: Europe, the United States, Australia and Japan*, Routledge, New York, 2022, 78.
 28. Erica Fraser. "Computers and Inventors – Legal and Policy Implications of Artificial Intelligence on Patent Law," *Scripted*, 2016. <https://script-ed.org/wp-content/uploads/2016/12/13-3-fraser-1.pdf>, accessed November 7, 2024.
 29. Indian Income Tax Act, 1956, Part 2(31), https://journals.co.za/doi/pdf/10.10520/AJA20785135_30773, accessed 07/11/2024.
 30. Renu Bala Rampal, Swaraj Singh Raghuwanshi. *Demystifying Rights of AI-Generated Invention*, 2023. <https://www.livelaw.in/law-firms/law-firm-articles/ai-generated-inventions-chatgpt-indian-patent-act-dabus-united-states-patent-trademark-office-European-patent-office-226394>, visit November 7, 2024.
 31. WIPO Magazine. *The Artificial Inventor Project*, 2019. https://www.wipo.int/wipo_magazine/en/2019/06/article_0002.html, accessed November 7, 2024.