Artificial Intelligence in the world of IP

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Artificial Intelligence (AI) in the world of Intellectual Property has raised some very interesting questions and debate. The patentability of AI related inventions, proprietary issues of inventorship and the lack of adequate regulations and standards have left some open-ended questions. AI related inventions generally use techniques like machine learning deep learning and neural networks. According to the WIPO publication 1055 – Technology Trends 2019, the most predominant AI functional applications have been filed in the fields of telecommunications, transportation and life and medical sciences with activity mainly in computer vision, natural language processing and speech processing. The same publication states that "the most marked increase in patenting activity between 2013 and 2016 features machine learning technique, deep learning" with deep learning having an average annual growth rate of 175 percent in this period. Robotics and control methods were the fastest growing AI functional applications, and aerospace/avionics and smart cities were the fastest growing application fields.[1]

In order to understand the possibility of patentability of AI related inventions, one needs to recognise that an AI related invention is not a single invention but a combination of several. It could be a computational or a mathematical method or an algorithm or a combination of both. It is questionable if it is even possible to capture these combinations in a claim or will that reduce the scope of protection. Further, the foundation of AI lies in its algorithms or mathematical models and this is not eligible for patent protection. In India, we have an absolute ban on the patentability of algorithms and computer programs unless it produces a technical effect or technical contribution which will be difficult to establish in an AI related invention. According to the section 3 (k) of the Indian Patent Act, mathematical and business methods, computer programmes per se or algorithms are categorized as non-patentable subject matter. Even if one manages to obtain patent protection, it may be redundant in light of the fact that the algorithms will be constantly revised and updated, and with this new inventions being created and requiring protection.

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[1] https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf

One could argue that copyright laws would indirectly protect the algorithm once incorporated into the code but since copyright law does not protect the inventive concept behind the expression, the AI related invention cannot fully be protected under copyright law.

Another problematic issue is the non-obvious rule connected to patentability of an idea. Patent law requires that an inventive concept be non-obvious to a person skilled in the art of that concept. In the world of AI and its capacity to process higher levels of intelligence and predictability, there is the likelihood that all inventive concepts could be considered obvious to an AI and if so, will that eliminate the stipulation for patent protection entirely.

Current patent law further attributes exclusive rights only to the true and first inventor, specifically to a natural person. Patent law as it stands today rewards only a natural person for AI innovation. In January 2020, the European Patent Office (EUIPO) refused two patent applications that listed AI as the inventor on the application. The applications were for a "Food Container", [2] and "Devices and Methods for Attracting Enhanced Attention"[3]. The EUIPO has mentioned that these applications "do not meet the requirement of the European Patent Convention (EPC) that an inventor designated in the application has to be a human being, not a machine." These applications were filed by the "Artificial Inventor Project" that also filed national phase applications under the PCT in seven other countries including the UK. The UK Patent Office also rejected the application noting "there appears to be no law that allows for the transfer of ownership of the invention from the inventor to the owner in this case, as the inventor itself cannot hold property."

It is agreed that AI cannot hold intangible rights or be held accountable for the same. However, in most countries, it is an offence to be listed as an inventor on a patent application with no contribution. "The threshold question in determining inventorship is who conceived the invention. [4] One must contribute to the conception to be an inventor." [5] Human creativity in developing and deploying AI is essential, however, if the machine can self-learn and effectively perform a task without being explicitly programmed, the question then arises is if the initial conception by the natural person is enough to be listed as the named inventor. What would happen if over the years, the initial concept has been so tremendously modified by the AI through its own learning so as develop a new concept.

This then asks the question if the notion of a legal person needs to be attributed to AI. Some have argued that AI be granted the title of "electronic person" thereby distinguishing it from

[2] Patent Application # EP3564144.

[3] Patent Application # EP3563896.

[4] Fiers v. Revel, 984 F.2d 1164, 1168, 25 USPQ2d 1601, 1604-05 (Fed. Cir. 1993)

[5] In re Hardee, 223 USPQ 1122, 1123 (Comm'r Pat. 1984).

a "natural person", with inventorship attributed to the electronic person and ownership of the patent attributed to the company owning the AI.

While international patent law so far seems to determine that only a natural person can own a patent, international copyright laws have raised some new issues when the People's Court of Nanshan District Shenzhen, China recently ruled that an article generated by AI software Dreamwriter is protected by copyright. The said article was accompanied by a disclaimer that stated that it "was automatically written by Tencent Robot Dreamwriter". However, the court found the articulation and expression in the article to have "certain originality" and meet the requirements for copyright protection. The court ordered Shanghai Yingxun Technology Co Ltd. to pay damages worth 1,500 yuan (US$216.02) to Tencent for illegally using this article. Since AI lacks ethical cognitive ability (for now) it is difficult to comprehend why AI would need acknowledgment for its creative expression considering that is the purpose of copyright law. However, the owner of the AI would be able to monetise on its creativity and that value would be a step in the right direction.

It is obvious there is a massive gap between ground reality and existing regulations with too many challenges brought on by AI. Today, IBM has the largest portfolio of AI related patent applications with 8,290 patent applications in the world, followed by Microsoft with 5,930 patent applications[6]. With this increasing popularity of AI related inventions and the sheer volume of AI related patent applications being filed, it will be upto the patent offices and regulators to revise existing patent and IP laws and create new molds to fit the emerging technology.

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[6]https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf