



**The Journal of Robotics,
Artificial Intelligence & Law**

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USPTO Releases Report on Artificial Intelligence and Intellectual Property Policy

Gregory Discher and Nicholas Rutigliano*

This article focuses on Part I of the U.S. Patent and Trademark Office's report titled "Public Views on Artificial Intelligence and Intellectual Property Policy," which summarizes the comments received in response to the Office's request for comments on patent-related questions regarding artificial intelligence.

The U.S. Patent and Trademark Office ("USPTO") has published a report titled "Public Views on Artificial Intelligence and Intellectual Property Policy."¹ The report summarizes the nearly 200 comments received in response to patent-related questions regarding artificial intelligence ("AI") set forth in a request for comments² ("RFC") issued by the USPTO in August 2019 and non-patent intellectual property ("IP") questions set forth in an October 2019 RFC.

This article focuses on Part I of the report, which summarizes the comments received in response to the first RFC. Part II of the report pertains to the second RFC.

Elements of an AI Invention

While AI has no universally recognized definition, AI may be understood as computer functionality that mimics human cognitive functions, such as the ability to learn. AI inventions may include inventions embodying an advance in AI itself (e.g., improved algorithms), inventions that apply AI to a field other than AI, and inventions produced by AI itself. Most commenters agreed that the current state of the art is limited to "narrow" AI that performs individual tasks, such as image recognition, in a well-defined domain and that AI is dynamic and subject to fundamental change in the coming years.

Conception and Inventorship

Most responses indicated that current inventorship law is equipped to handle AI technologies and the assessment of conception should remain fact specific. The use of AI as a tool in the inventive process would generally not preclude a natural person from being an inventor. Many commenters took issue with the premise that AI, under the current state of the art, was advanced enough to “conceive” of an invention. Although the USPTO understands the patent statute and the U.S. Court of Appeals for the Federal Circuit case law to require an inventor to be a natural person, some suggested that the question should be revisited when artificial general intelligence (“AGI”), akin to intelligence possessed by humankind and beyond, is realized. Some even suggested that AGI was a present reality that should be addressed.

Ownership of AI Inventions

Most believed that no changes should be necessary with respect to patent ownership under U.S. law, in which only a natural person or a company (via assignment) can own a patent or invention. But, while no commenters suggested that ownership rights should extend to machines, some believed that consideration should be given to extending ownership rights for AI-generated inventions to natural persons who train the AI process, or who own/control the AI system.

Subject Matter Eligibility Under 35 U.S.C. § 101

Many commenters asserted that there are no patent eligibility considerations unique to AI inventions. This is consistent with current USPTO practice—AI inventions are examined under the U.S. Supreme Court’s *Alice/Mayo* test, as are all computer-implemented inventions. But this test may present problems for some AI inventions because they can be characterized as certain methods of organizing human activity, mental processes, or mathematical concepts. Patent applicants should consult USPTO subject matter eligibility guidance³ and Federal Circuit decisions in this area when crafting patent applications and devising prosecution strategies to obtain patent protection that is commensurate with business objectives.

Written Description and Enablement Under 35 U.S.C. § 112(a)

Most commenters agreed that there are no unique written description requirements for AI inventions to show that the inventor had possession of the full scope of the claimed invention. However, there can be significant challenges in satisfying the disclosure requirements for AI inventions when, for example, AI logic is in some respects unknown. Commenters noted that it is critical for the USPTO to police these requirements to ensure patent quality.

When determining whether the specification satisfies the enablement requirement, patent applicants should be cognizant of the breadth of their claims, the knowledge in the art, and the predictability of the art. Generally, more disclosure is needed when less is known about the nature of the invention or when the art is less predictable.

Commenters presented differing views as to the predictability of AI inventions. Some explained that AI inventions generally behave predictably in their practical applications, which is a basis for their commercial value. Others indicated that some AI inventions might be less predictable due to inherent randomness in their algorithms. This unpredictability may make it appropriate to consider established factors such as the level of predictability in the art, amount of direction provided by the inventor, existence of working examples, and quantity of experimentation necessary to make or use the invention based on the content of the disclosure.

Level of Ordinary Skill in the Art

The USPTO sought comments as to how AI impacts the level of ordinary skill in the art in assessing nonobviousness—a legal determination based on underlying factual inquiries such as the scope and content of the prior art, the differences between the claimed invention and the prior art, and the level of ordinary skill in the art. The level of ordinary skill in any art evolves based on the introduction of new technologies, and as AI systems become widely available, such accessibility could enhance the abilities of a person of ordinary skill in a given field. However, because widespread use of AI systems has not yet permeated all fields, commenters cautioned

the USPTO against broadly declaring that the application of conventional AI is an exercise of ordinary skill in the art.

Prior Art Considerations

The USPTO received comments relating to the impact of AI on what can be considered prior art, the quantity of prior art, and the accessibility of prior art. Patent applicants may want to develop strategies pertaining to whether and how to search for AI-related prior art before and during prosecution.

While most commenters agreed that there are no unique prior art considerations for AI inventions, some flagged this as a potential issue as AI evolves and has the ability to generate massive amounts of prior art, possibly for the express purpose of rendering potential future inventions unpatentable. Also, a significant proportion of AI technology remains documented only in source code, which may not be accessible and is difficult to search for. Commenters mentioned the importance of examiner training and providing examiners with additional resources for identifying and finding AI-related prior art.

Non-Patent IP Protection and Other Issues

Many commenters noted the importance of “big data” in developing and training AI systems, but they were split as to whether new forms of IP rights are necessary for AI inventions. Those in favor of new IP rights focused on the need to protect proprietary data while allowing new market entrants and others to use the data to train and develop their AI. Also mentioned was the possibility of providing additional IP protection for trained models and an openness to new forms of IP protection as AI technology continues to advance. Commenters also stressed the need for examiner technical training and examiner guidance specific to AI.

The USPTO should be informed by AI work and programs at:

- The European Patent Office,
- Japan Patent Office,
- Korean Patent Office, and
- Intellectual Property Office of Singapore.

While commenters wanted the USPTO to continue its multilateral engagements on AI through World Intellectual Property Organization and the IP5,⁴ the Office was also cautioned against further attempts to harmonize patent laws and procedures—especially as it relates to AI—because U.S. patent law is the gold standard.

Notes

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1. https://www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf.

2. https://www.federalregister.gov/documents/2019/08/27/2019-18443/request-for-comments-on-patenting-artificial-intelligence-inventions?hss_channel=tw-831619001625276417.

3. <https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility>.

4. <https://www.fiveipoffices.org/about>.