

IP Frontiers: AI patent drafting strategies for overcoming non-patentable subject matter rejections



The World Intellectual Property Organization's recent publication title: "WIPO Technology Trends 2019-Artificial Intelligence" defines artificial intelligence ("AI") systems primarily as:

"learning systems; that is machines that can become better at a task typically performed by humans with limited or no human intervention."

Inadvertently though, the ability of AI systems to perform human tasks better and faster than humans has clashed with recently evolving legal standards on what inventions may qualify under the law as patent eligible subject matter.

In the United States, which arguably imposes the most difficult legal hurdles of any country with regard to patent eligibility, patent eligible subject matter is defined in 35 United States Code section 101 ("section 101") to be:

"any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."

Moreover, U.S. courts have long held that abstract ideas, laws of nature, and natural phenomena are not eligible for patent protection under section 101. The reasoning behind these judicially created exceptions is that they are considered to be the basic tools of scientific and technological work. Therefore the courts are concerned that granting patents on them would inhibit, rather than encourage, future innovations.

The standard for patent subject matter eligibility became more stringent with the U.S. Supreme Court's 2014 decision in *Alice Corp Pty. Ltd v. CLS Bank International*, 134 S. Ct. 2347 ("Alice"). The *Alice* decision defined a two-step test of: (1) determining whether the claim of an invention is directed to a patent-ineligible concept (such as an abstract idea); and if so, (2) determining if there are additional elements in the claim that contain an "inventive concept" sufficient to transform the abstract idea into a "patent eligible application."

Unfortunately, the courts, as well as the Unit-

ed States Patent and Trademark Office (USPTO), have struggled to apply the *Alice* test with a reasonable degree of consistency. Accordingly, litigation over what constitutes patent eligible subject matter has increased markedly since the *Alice* decision, especially in the area of abstract ideas. This is due, in no small part, to the fact that the Supreme Court has not established a definitive rule to determine what constitutes an abstract idea. Rather, the Supreme Court, and lower courts, "have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish, LLC v Microsoft Corp.*, 822 F. 3d. 1327, 1334 (2016).

The problem of eligibility is especially acute for AI inventions, which are often rejected by the USPTO as being directed to an abstract idea. This is because an abstract idea may be loosely defined as any concept that can theoretically be performed in the human mind or with pencil and paper, which closely parallels the definition of AI as:

"The capability of a machine to imitate intelligent human behavior (such as reasoning, learning, or the understanding of speech)." (*Merriam Webster - Unabridged*, <https://unabridged.merriam-webster.com/>)

In an effort to provide more clarity to the analysis of patent subject matter eligibility and particularly to the analysis of abstract ideas, the USPTO published its "2019 Revised Patent Subject Matter Eligibility Guidance" ("2019 PEG"). The 2019 PEG categorizes abstract ideas into the three main groupings of: Mathematical Concepts, Mental Processes (concepts performed in the human mind) and Certain Methods of Organizing Human Activity.

AI Inventions frequently receive 101 rejections from the USPTO for falling into the grouping of Mental Processes/Abstract Ideas under the 2019 PEG. With that in mind, there are certain precautionary measures one can take in drafting a patent application for an AI invention that would greatly increase ones chances of overcoming a potential 101

rejection by the USPTO.

First, and probably foremost, the 2019 PEG (as well as a growing body of court decisions) states that: "an improvement in the functioning of a computer or other technology or technical field may render a claim patent eligible at step one of the *Alice/Mayo* test even if it recites an abstract idea, law of nature or natural phenomenon." So it is important that the patent application include a detailed explanation of how the AI invention effects a specific technical improvement in either the functioning of the computer system in which it is implemented or the technology field in which it is utilized.

Second, the state of the prior art should be detailed, to the best of the inventor's ability, in the application. This is because in order to describe a technology improvement in any detail, one must have a prior art baseline to compare the improvement to. Indeed, if no state of the prior art is mentioned in the application, there can arguably be no measurable way to claim an improvement. It is important to note, that for a section 101 eligibility determination, the state of the prior art is what the application asserts it to be. It is not necessarily what the actual prior art turns out to be after a search has been conducted by an Examiner at the USPTO to determine patentability. This is because eligibility under section 101 is a threshold determination that must be assessed first, before an Examiner addresses the question of patentability. *Ultramercial, Inc. Hulu, LLC*, 772 F.3d 709 (2014). An Examiner must make a determination of patent eligible subject matter (for a potential 101 rejection) prior to doing any patentability searches (for potential novelty (102) or obviousness (103) rejections). Therefore, for a determination of patent eligibility under section 101, an Examiner must look to the contents of the application itself to determine the prior art and the improvement over that prior art.

Finally, the stated improvement should be integrated into the language of the claims if possible. General statements of improvement, such as increases in efficiency or speed, of

a system will not be enough and will not carry any patentable weight. Rather application should state precisely what the detailed mechanisms or methods are that make the improvements possible, and that language should be inserted into the claims.

In conclusion a patent application for a computer-implemented AI invention, should be written anticipating a patent eligibility challenge from the USPTO in the form of

a section 101 rejection. One of the most recognized and consistent ways to avoid or overcome such a challenge is to:

- detail a specific technical improvement the AI invention effects in the AI computer system or related technology field;
- baseline the state of the prior art over which the improvement is made; and
- include the details of the improve-

ment in the language of the claims.

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