Articles + Publications | August 23, 2024

Leveraging Policy Changes to Achieve AI Patent Eligibility

WRITTEN BY

Nicholas J. Gallo

Published in Law360 on August 23, 2024.

The patent landscape for artificial intelligence is poised to undergo significant transformation.

Not only has the U.S. Patent and Trademark Office recently issued its 2024 Guidance Update on Patent Subject Matter Eligibility, Including on Artificial Intelligence,[1] but the potential enactment of the Patent Eligibility Restoration Act of 2023 is also on the horizon.

If PERA passes, it could further reshape the field by eliminating judicial exceptions for patent eligibility and broadening the scope of patentable subject matter — meaning there is likely to be a flood of new AI patent applications.

Subject matter eligibility is the threshold hurdle for achieving patent protection. AI inventions must demonstrate substantive innovation versus merely analyzing data to generate a model. In many cases, AI inventions are deemed to fall within the judicial exception for abstract ideas, subjecting them to greater scrutiny and analysis than other technology areas in which written description and prior art requirements are the primary applicant concerns.

With the latest guidance in hand and potential new legislation looming, innovators should make sure they are at the front of the line and file their patent applications now to add enterprise value and ensure future freedom to operate. By employing the below strategic approaches to patent eligibility, AI patent applicants can maximize their chances of success.

Avenues to Patent Eligibility

Under current law, there are three avenues to achieving subject matter patent eligibility for a claimed invention. A claimed invention is only eligible for patent protection if it belongs to one of four statutory categories: a process, machine, manufactured item, or composition of matter, and meets one of the following standards:

1. No judicial exception: The claimed invention does not recite a judicial exception, such as a law of nature, natural phenomena or abstract idea, and is thus patent-eligible.

2. Practical application: If the claimed invention does recite a judicial exception, the claimed invention can

nonetheless be patent-eligible if it includes additional elements that integrate the judicial exception into a practical application.

3. Inventive concept: If there is no practical application, the claim is then directed to the judicial exception, and can nonetheless be patent-eligible if it is determined the claim recites additional elements that amount to significantly more than the judicial exception.

For most AI technologies, the threshold subject matter eligibility analysis boils down to whether the claimed invention recites an abstract idea — a judicial exception. Should PERA be enacted, this judicial exception will be eliminated, making it easier for an AI invention to achieve patent eligibility.

5 Patent Eligibility Strategies for AI

1. Claim a Technical Solution Versus a Desired Result

We recommend framing an AI invention as a technical solution that improves computer functionality and solves a technical problem, including those specific to computer networks or particular technical fields.

By describing a problem in the art and claiming a solution, rather than just a desired result, the invention is less likely to be deemed an abstract idea requiring additional patent eligibility analysis and more likely to satisfy the current eligibility analysis. This will be particularly important should PERA fail to be enacted or the USPTO's treatment remain relatively unchanged despite PERA's express elimination of the judicial exceptions.

Federal precedent also supports that an invention is at greater risk of being deemed an abstract idea if the specification focuses on what it does rather than how it does it.[2]

To avoid potential classification as an abstract idea, a patent specification should detail the relevant data structures and algorithms. Additionally, explicitly identifying the steps or structures that yield a technical improvement and describing their technical advantages (e.g., reduced processing times, shared computing resources, or increased network security) is advisable.

However, it's important to note the recent U.S. Court of Appeals for the Federal Circuit ruling in Miller Mendel Inc. v. City of Anna, Texas, which found that steps and structures that are merely routine would not amount to a technical improvement, particularly when described in the specification as merely automating previously manual tasks.[3]

Linking claim limitations to hardware components like specialized processors can further support the argument that the claims are not abstract, as is made clear in Example 47 of the new USPTO guidelines. In the example, a claim to an application-specific integrated circuit for an artificial neural network is patent-eligible, whereas another claim to training and using an artificial neural network is not.

2. Seek an Advantageous Art Unit Classification

Assignment to a favorable USPTO art unit can be critical for AI patent applications. Each art unit has examiners with specific expertise, and some units may be more favorable for the eligibility review process. For instance, an insurance company's medical informatics AI invention could fare better in the 1600 Technology Center for biotechnology than in the 3600 Technology Center for electronic commerce, which has a far higher rejection rate.

The field, claim preamble and other portions of patent application specification can be used to frame an invention into a preferable art unit, as well as support eligibility arguments under the practical application or inventive concept prongs of the test. The field is the opening paragraph of a specification, while the preamble begins a claim. Both can guide the examiner's interpretation of the invention as either a technical solution or an abstract idea with practical application.

For example, limiting recitation of certain business and financial terms in the field and claim preamble — e.g., replacing the words "cryptocurrency wallet" with "cryptographic signing application" — can help avoid potential assignment to the 3600 Technology Center, which can put patent eligibility at greater risk.

3. Explain the Details of AI Technology Training

Examiners are increasingly focused on the details of model training in the context of AI inventions. A specific iterative model training process with multiple stages and defined data inputs may be patent-eligible without needing to further undergo practical application or inventive concept analyses, as it would potentially avoid the judicial exception for abstract ideas.

The USPTO's 2019 Revised Patent Subject Matter Eligibility Guidance provides a helpful approach for drafting eligible claims through Example 39, which does not recite a mental process abstract idea because the steps are not practically performed in the human mind. The claim in Example 39 is generally directed to an iterative training algorithm in which a system is retrained in a second stage with an updated training set containing false positives produced after the first training stage.

Since many models used in AI technology undergo an iterative training process with feedback and continual learning, details regarding specialized training including unique data inputs or training stages can help applicants avoid or overcome eligibility rejections. Therefore, explaining the details of AI technology training is a useful practice when trying to achieve subject matter eligibility.

4. Avoid Reciting Conventional Computer Functions and Mathematical Formulas

Many AI inventions ingest data, train a model and store outputs. However, obtaining and storing data are abstract ideas, as they are clearly conventional functions of generic computing devices. Thus, obtaining data should be recited passively or excluded. Claim limitations for storing data should also be avoided when possible.

Further, excluding or limiting recitation of mathematical formulas or equations from the claims will also reduce the likelihood that the claims will subsequently be determined to be directed to a mathematical concept abstract idea. However, we note that Example 39 of the 2019 guidelines makes clear that a mathematical concept like a mathematical relationship, formula or equation must be explicitly recited in a claim limitation for the claim limitation to be directed to an abstract idea.

Accordingly, comparisons and correlations arguably fall outside of the mathematical concept abstract idea, which the USPTO confirmed in Example 48 of the 2024 guidelines. If reciting a mathematical concept is necessary, ensure that the claim otherwise integrates the abstract idea into a practical application as in Example 45 of the USPTO's 2019 guidelines.

5. Leverage the Output of the Inventions to Claim Practical Use

Instead of merely calculating or storing the output of an AI model, claim practical use of the model's output. That way, if the AI model was deemed an abstract idea subject to judicial exceptions, claiming the model's output would support persuasive arguments for the practical application of the invention.

AI inventions that not only generate predictions, but use model output to solve a technical problem, and thus integrate data manipulations or vector correlations, for example, into a practical application, will be more likely to be deemed eligible subject matter by the USPTO. Again, it is imperative to do something practical and technical with model output to frame the invention.

Example 49 of the 2024 guidelines is instructive here. Claim 1 of Example 49 recites "administering an appropriate treatment," but is ineligible for patent protection. In contrast, eligible claim 2 of Example 49 specifies that "the appropriate treatment is Compound X eye drops." While administering eye drops is well known, routine and conventional activity, that analysis is irrelevant to the practical application prong of the eligibility test. Accordingly, leveraging the output, even to perform a convention activity, can yield a patent-eligible claim.

Conclusion

To the extent an applicant may believe an invention is in an eligibility gray area, pending legislation may tip the scale in favor of committing resources to seeking patent protection now. Trends clearly show a rising rate of AI inventions satisfying the subject matter eligibility test, even as uncertainty over the parameters of patent eligibility persist and the law evolves.

Rachel Zaslavsky, a former intern with Troutman Pepper who is not admitted to practice law in any jurisdiction, also contributed to this article.

---

[1] U.S. Patent and Trademark Office, 2024 Guidance Update on Patent Subject Matter Eligibility, Including on Artificial Intelligence, available at https://www.federalregister.gov/documents/2024/07/17/2024-15377/2024-guidance-update-on-patent-subject-matter-eligibility-including-on-artificial-intelligence.

[2] Bridge & Post, Inc. v. Verizon Comms., Inc. , 778 Fed. Appx. 882, 895 (Fed. Cir. 2019).

[3] Miller Mendel, Inc. v. City of Anna, Texas , No. 2022-1753 (Fed. Cir. July 18, 2024).

RELATED INDUSTRIES + PRACTICES

- Health Care + Life Sciences Intellectual Property
- Artificial Intelligence

- Intellectual Property