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Intellectual Property Alert

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The USPTO issues updated AI subject matter eligibility guidance

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The Guidance will help patent attorneys and examiners clarify the circumstances in which a claim is likely to survive examination.

What's the impact?

- Because the Guidance assumes most AI-based method claim examples are abstract ideas, much of the discussion focuses on determining if the claim transforms the abstract idea into a practical technological application.

- Claims generally referring to training an AI model and using the model to detect patterns or analyze data are less likely to survive examination, while claims more explicitly reciting specific and/or practical uses of the results of AI analysis are more likely to survive.

- The Guidance will be helpful for practitioners working on AI-related applications sufficiently similar to the examples, but unanswered questions remain as to others.

The US Patent and Trademark Office (USPTO) issued updated guidance on patent subject matter eligibility for artificial intelligence (AI) related inventions effective July 17, 2024. Through its

discussion of three hypothetical AI-related patent examples, the Guidance seeks to further aid patent attorneys and examiners when considering whether a claim is directed to an unpatentable abstract idea or patentable technological improvement. The guidance addresses three hypothetical AI-related patent examples (Examples 47–49) examiners and practitioners can study when encountering similar fact patterns during examination.

Patent example 47—Inventive concepts

Example 47 is directed to an artificial neural network (ANN) to identify or detect anomalies for image or speech recognition applications. Claim 1 recites a "plurality of neurons organized in an array, wherein each neuron comprises a register, a microprocessor, and at least one input." The Guidance finds claim 1 eligible because it requires an IC with a specially customized physical structure, namely an application-specific integrated circuit (ASIC).

Method claim 2 performs steps, such as training an ANN, detecting anomalies using the trained ANN, and analyzing the detecting anomalies. The Guidance finds this claim ineligible for lacking details as to how these steps are performed.

Claim 3 is a method claim directed to similar subject matter. However, unlike claim 2, the Guidance finds claim 3 to be eligible under Step 2A, Prong Two for requiring that the detected anomaly information is used in a specific way. In doing so, the Guidance highlighted steps (d)–(f), which refer to detecting source addresses associated with malicious network packets, dropping potentially malicious packets, and blocking future traffic from the source address. Thus, the claim 3 added an inventive concept.

Patent example 48—Technical improvements

Example 48 relates to spoken language interpretation and, more specially, to a deep neural network (DNN) that separates desired speech from background features. Claim 1 recites a "speech separation method" that receives a speech signal and uses a DNN to determine features. The Guidance finds this claim ineligible as being directed to a mathematical operation without sufficiently integrating the operation into a technical improvement. The Guidance credits the disclosure for identifying a technical problem; claim 1 does not "reflect" that improvement.

Claim 2, in contrast, further recites processing speech signals to create clusters, which are combined into a mixed signal transmitted "for storage to a remote location." The Guidance finds this claim eligible because the step of "synthesizing speech waveforms from the masked clusters," and "combining the speech waveforms to generate a mixed speech signal" offers a "particular" improvement over existing methods.

Similarly, claim 3 was found eligible for reciting "details of how the DNN trained on source separation aids in the cluster assignments." The Guidance notes that while some steps of claim 3

recite an abstract idea, the ordering of these steps and additional elements direct the claim to a technical improvement and add an inventive concept.

Patent example 49—Converting abstract ideas

Example 49 relates to treating fibrosis, a disorder associated with glaucoma and, more specifically, methods using AI to provide personalized medical treatment to fibrosis patients. Claim 1 recites treatment method steps, including, (a) collecting a sample, (b) identifying high-risk conditions, and (c) administering "an appropriate treatment." The Guidance finds this claim ineligible. In doing so, the Guidance is particularly critical of step (c), which "fails to meaningfully limit the claim because it does not require any particular application of the abstract idea." Disclosure that the claimed AI model is an improvement because it determines a risk score and provides a classification in less time appears insufficient to show an improvement to the functioning of a computer nor to any other technology. While the specification remains the basis for the problem/solution addressed by the claims, what is sufficient disclosure to show an "improvement to ... any other technology" appears open to interpretation.

The Guidance, however, finds Claim 2 eligible based on adding one short phrase: "wherein the appropriate treatment is Compound X eye drops." According to the Guidance, this phrase converts the abstract idea into a "particular treatment for a medical condition."

Maximize AI patentability

Innovators seeking to patent AI-related inventions can look to these examples to improve their claims. Particularly, by studying the differences in the successful versus unsuccessful examples, inventors and practitioners can gain an understanding of the specific conditions and concepts that they must include to survive examination. Including these points will also bolster patent appeals.

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