



Intellectual Property Prosecution, Transactions & Portfolio Management Update

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PTAB Applies *Ex parte Desjardins* to Reverse Section 101 Rejection of Neural Network Training Claims

In *Ex parte Brambila*, Appeal 2026-000770, the Patent Trial and Appeal Board (Board) of the United States Patent and Trademark Office (USPTO) reversed the Examiner's rejection of all pending claims under 35 U.S.C. § 101. The Board held that claims directed to training a neural network to classify Internet-of-Things (IoT) data streams integrated the abstract idea into a practical application at Step 2A, Prong Two of the *Alice/Mayo* framework, which the USPTO uses to analyze patent eligibility under 35 U.S.C. § 101. The decision builds on the Board's precedential opinion in *Ex parte Desjardins*, which established that innovations in training machine learning models can constitute improvements in computer functionality that satisfy the patent eligibility requirements.

The application on appeal claimed a computer-implemented method for classifying non-structured data streams received from IoT devices. The method involves the following steps:

- receiving labeled sensor readings
- partitioning the data streams
- applying feature engineering techniques: measurement summarization, histogram generation and Fourier transforms
- building a vector representation through concatenation and normalization
- training a neural network with a topology is determined by the extracted features
- classifying new data streams using the trained network

The Examiner rejected all claims under the *Alice/Mayo* framework as directed at an abstract idea (specifically, a mental process) without significantly more. The Appellant appealed to the Board.

The Board parted ways with the Examiner at Step 2A, Prong Two of the *Alice/Mayo* framework. It identified the neural network training limitation as the critical additional element: "training, by the one or more processors, a neural network using a topology of a predetermined minimum number of layers and neurons selected based on the set of features."

The Board relied heavily on *Ex parte Desjardins*. In that decision, claims that improved "how the machine learning model itself operates" by "address[ing] challenges in continual learning and model efficiency by reducing storage requirements and preserving . . . training" were found to integrate the abstract idea into a practical application. *Desjardins* held that innovations in training a machine learning model are "an improvement in the functioning of a computer, or an improvement to other technology or technical field."

In *Brambila*, the training limitation maps the number of neurons in the input layer to the size of the final concatenated feature vector. According to the specification, this approach simplifies the neural network's topology and reduces dimensionality in the input layer. The Board identified two resulting improvements flowing from this innovation:

- simpler parameterization, meaning it's easier to adjust weights and biases to increase accuracy
- faster training, meaning greater efficiency

The Board rejected the Examiner's argument that the claim language itself did not recite or reflect any improvement in computing efficiency. It noted that *Desjardins* does not require the claim to describe the improvement explicitly; it

is sufficient that the specification explains the benefits. The Examiner offered no persuasive explanation or evidence to counter the improvements stated in the specification. The Board also found that the Appellant had shown evidence that the claimed training method improves the technology of machine learning itself, rather than merely reciting a field of use.

The Board therefore concluded that claim 1 integrates the abstract idea into a practical application under Step 2A, Prong Two of the *Alice/Mayo* framework.

Takeaways for Patent Applicants

Brambila confirms that *Ex parte Desjardins* provides a useful framework for overcoming § 101 rejections under the *Alice/Mayo* framework for artificial intelligence and machine learning inventions. Applicants should keep the following in mind:

- **The specification can carry the improvement.** The claims need not state the technical improvement expressly. However, the specification should explain in detail how the training innovation improves the technology.
- **Specific training limitations matter.** Technical limitations on how a neural network is trained can integrate an abstract idea into a practical application under Prong Two.
- **Generic training language is not enough.** A bare recitation of “training a neural network,” without specific limitations tied to a technical improvement such as computing efficiency is unlikely to satisfy Prong Two.

FOR MORE INFORMATION

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