

Alert | Patents and Innovation Strategies



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Federal Circuit: Machine Learning Patents Ineligible in *Recentive Analytics, Inc. v. Fox Corp.*

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- The Federal Circuit ruled, in a case of first impression, that the machine learning patents at issue were ineligible under 35 U.S.C. § 101.
- In its precedential decision, the court held that claims that merely apply “established methods of machine learning” to “new data environments” are ineligible for protection.
- The court emphasized that iterative training and dynamic adjustments are inherent to the nature of machine learning and do not constitute an inventive concept.
- The decision underscores the importance of disclosing specific implementations or improvements to machine learning processes in patent applications.

In a precedential decision addressing the intersection of machine learning and patent law, the Federal Circuit affirmed the district court’s dismissal of Recentive Analytics, Inc.’s patent infringement claims against Fox Corp. and its affiliates. The court held that Recentive’s patents merely applied generic machine learning techniques to the fields of event scheduling and network map creation, and thus were directed to abstract ideas that lacked an inventive concept sufficient to satisfy the requirements of 35 U.S.C. § 101. This decision underscores the challenges of securing patent protection for new applications of established machine learning techniques in various fields.

In a succinct statement of the Federal Circuit’s decision, Judge Dyk, writing for the panel that included Judge Prost and Chief District Judge Goldberg (sitting by designation), stated “[t]his case presents a question of first impression: whether claims that do no more than apply established methods of machine learning to a new data environment are patent eligible. We hold that they are not.”

Recentive Analytics, Inc. is the owner of four patents: U.S. Patent Nos. 10,911,811 (‘811 patent), 10,958,957 (‘957 patent), 11,386,367 (‘367 patent), and 11,537,960 (‘960 patent). These patents fall into two categories: the “Machine Learning Training” patents (the ‘367 and ‘960 patents) and the “Network Map” patents (the ‘811 and ‘957 patents). The Machine Learning Training patents claim methods for dynamically generating optimized schedules for live events using machine learning models, while the Network Map patents claim methods for creating optimized network maps for television broadcasters using similar techniques.

Recentive sued Fox Corp., Fox Broadcasting Company, LLC, and Fox Sports Productions, LLC (collectively, Fox) for infringement of these patents. Fox moved to dismiss the complaint, arguing that the patents were directed to ineligible subject matter under § 101. The district court granted the motion, finding that the patents were directed to abstract ideas and lacked an inventive concept. Recentive appealed to the Federal Circuit.

The Machine Learning Training patents focus on optimizing event schedules using machine learning models. Claim 1 of the ‘367 patent is representative and describes a method involving:

1. Collecting Data: Receiving event parameters (e.g., venue availability, ticket prices) and target features (e.g., event attendance, revenue).
2. Training the Model: Iteratively training a machine learning model to identify relationships between the event parameters and target features using historical data.
3. Generating Output: Producing an optimized schedule for future events based on user-specific inputs.
4. Updating the Schedule: Dynamically adjusting the schedule in response to real-time changes in data.

The specification emphasizes that the machine learning model can employ “any suitable machine learning technique,” such as neural networks, decision trees, or support vector machines. It also highlights the use of generic computing equipment to implement the claimed methods.

The Network Map patents address creating network maps for broadcasters, which determine the programming displayed on television stations in various geographic markets. Claim 1 of the ‘811 patent is representative and describes a method involving:

1. Collecting Data: Receiving broadcasting schedules for live events.
2. Analyzing Data: Generating a network map that optimizes television ratings across multiple events using machine learning techniques.
3. Updating the Map: Dynamically adjusting the network map in real time based on changes to schedules or criteria.
4. Using the Map: Determining program broadcasts based on the optimized network map.

Like the Machine Learning Training patents, the Network Map patents discuss the use of generic machine learning techniques and computing equipment.

The lower court applied the two-step framework established in *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014), to assess patent eligibility. At step one, the court found that the claims were directed to abstract ideas—producing event schedules and network maps using known mathematical techniques. At step two, the court concluded that the claims lacked an inventive concept, as they merely applied generic machine learning techniques and relied on conventional computing devices. The court also denied Recentive’s request for leave to amend, finding that any amendment would be futile.

The Federal Circuit affirmed the district court’s decision, holding that Recentive’s patents were ineligible under § 101. The court’s analysis focused on both steps of the *Alice* framework.

At step one, the Federal Circuit examined whether the claims were directed to patent-ineligible abstract ideas. The court emphasized that the focus of the claimed advance over the prior art was the application of generic machine learning techniques to the fields of event scheduling and network map creation. It noted that Recentive had repeatedly conceded that its patents did not claim improvements to machine learning itself but merely applied existing machine learning methods to new environments.

The court observed that the Machine Learning Training patents relied on conventional machine learning techniques, such as neural networks and decision trees, and generic computing equipment. Similarly, the Network Map patents employed generic machine learning methods to optimize television ratings. The court concluded that the claims were directed to abstract ideas because they did not disclose any technological improvement or specific implementation of machine learning.

The Federal Circuit rejected Recentive’s argument that its patents were eligible because they applied machine learning to a new field of use. Citing precedent, the court reiterated that “[a]n abstract idea does not become nonabstract by limiting the invention to a particular field of use or technological environment.” The court also noted that applying existing technology to a novel database or data environment does not create patent eligibility.

At step two, the Federal Circuit considered whether the claims contained an “inventive concept” sufficient to transform the abstract idea into a patent-eligible application. Recentive argued that its patents introduced an inventive concept by using machine learning to dynamically generate optimized maps and schedules based on real-time data. The court rejected this argument, finding that the claimed methods merely described the abstract idea itself. The court emphasized that iterative training and dynamic adjustments are inherent to the nature of machine learning and do not constitute an inventive concept. It noted that the patents did not disclose any specific method for improving machine learning algorithms or achieving technological advancements. Instead, the claims relied on generic machine learning techniques and computing devices, which are insufficient to satisfy step two of the *Alice* inquiry.

The Federal Circuit also rejected Recentive’s argument that its patents were eligible because they performed tasks previously undertaken by humans with greater speed and efficiency. The court explained that increased speed and efficiency resulting from the use of computers do not render claims patent eligible unless they involve improved computer techniques.

Takeaways

The Federal Circuit’s decision highlights the court’s thinking on patent eligibility limits as applied to machine learning-based inventions. The court has now clarified that applying generic machine learning techniques to new data environments does not create patent eligibility unless the claims disclose specific technological improvements or inventive concepts. This holding is consistent with the Federal Circuit’s broader § 101 jurisprudence, which has repeatedly emphasized that abstract ideas do not become patent

eligible simply by limiting them to a particular field of use or implementing them on generic computing devices. The decision also underscores the importance of disclosing specific implementations or improvements to machine learning processes in patent applications.

At its conclusion, the decision recognizes that “[m]achine learning is a burgeoning and increasingly important field and may lead to patent-eligible improvements in technology” and provides some hope that its decision will be cabined to specific facts by stating “[t]oday, we hold only that patents that do no more than claim the application of generic machine learning to new data environments, without disclosing improvements to the machine learning models to be applied, are patent ineligible under § 101.” It will remain to be seen how lower courts, and the U.S. Patent Office, apply this new decision.

For practitioners, the *Recentive* decision highlights the need to carefully draft claims that go beyond the mere application of existing machine learning techniques. Patent applicants should focus on demonstrating how their inventions improve machine learning models or achieve technological advancements. Without such disclosures, machine learning-based patents may face significant hurdles under § 101. As machine learning continues to play an increasingly important role in technological innovation, this decision serves as a reminder of the challenges of securing patent protection in this evolving field.

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