AI and Patents: A Quick Primer

The world of Artificial Intelligence ("AI")-related patents is new and complex. With the technology still developing and rapidly changing, it can be hard to keep-up. Banner Witcoff attorneys, who handle hundreds of different AI-related patents a year, wrote the guide (available here on Lexis Plus) which many other firms today use for drafting and prosecuting AI-related patents. As pioneers in AI-related patents, Banner Witcoff celebrates this year's Day of AI with a quick primer on how the world of patents has merged with artificial intelligence.

Artificial Intelligence vs. Machine Learning vs. Neural Networks

There are key differences between AI, Machine Learning ("ML"), and Artificial Neural Networks ("ANNs"):

- **Artificial Intelligence** broadly refers to causing computing devices to perform human-like thinking.
- **Machine Learning** is a subset of artificial intelligence that involves teaching computers to learn and act based on that learning.
  - Some machine learning methods involve **Deep Learning**, which generally refers to machine learning algorithms with multiple "layers" in a learning network.
- **Artificial Neural Networks** are a form of algorithm that use math to mimic the way the human brain learns and/or processes information. They are generally used for machine learning.

Developers have been working on artificial intelligence for years. That said, recent developments in machine learning models/artificial neural networks, helped in no small amount by the increasing power of computer hardware, has made it easier than ever to perform artificial intelligence tasks.

Artificial Intelligence Inventions are Possible in Many Industries

AI can be used to improve virtually any industry. For example, while manufacturers might find AI useful for process monitoring and remediation, computer security companies might use AI to analyze network risk.

Broadly, we have seen two different types of artificial intelligence-related inventions:

- **Improvements using AI –** These are inventions which use AI as part of a larger process. For example, these inventions might use AI techniques to automate processes that previously might have been performed by a human being.
- **Improvements to AI –** These are inventions that, for example, improve how machine learning models learn, the speed of artificial neural networks, or the like.

Why is it Hard to Patent Artificial Intelligence?

Patent offices around the world receive hundreds, if not thousands, of new AI-related patent applications every year. Those applications often face substantial difficulty for a variety of reasons, including:

- The general concept of "do this task, but with machine learning" is often rejected as obvious;
- The popularity of artificial intelligence has made many industries test out implementation of artificial intelligence in different contexts, meaning that there are plenty of possible sources for anticipating references; and
- Many examiners believe that machine learning inventions should not be patent-eligible when they merely replace human thinking with a machine learning model.

Given these difficulties, it is extremely important to retain patent counsel (like Banner Witcoff) that have extensive experience with filing and prosecuting patent applications directed to artificial intelligence-related inventions. Mistakes made during drafting and prosecution can be costly: for example, a patent claim that recites machine learning processes incorrectly can be wholly valueless. The world of AI patents is evolving as fast as AI itself–accordingly, it is extremely important to retain the best counsel possible for AI-related patents.

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