Patentability of AI in United States
人工智慧在美國的可專利性

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在當今快速發展的技術格局中，人工智慧 (AI) 已成爲各行業的變革力量。從提高製造效率到徹底改變醫療診斷，人工智慧應用已經無所不在。然而，儘管人工智慧技術具有突破性的能力，但其專利性仍存在爭議。雖然創新者尋求保護他們的人工智慧發明，但美國專利商標局 (USPTO) 在獲得基於人工智慧的創新的美國專利方面面臨著巨大的挑戰。本文深入探討了美國專利商標局無法爲人工智慧申請專利的原因，並探討了這項限制的涵義。

可專利性的基本要求之一是發明人的身分。根據2024年2月13日在聯邦公報上發布的美國專利商標局指南（請參閱 https://www.federalregister.gov/documents/2024/02/13/2024-02623/inventorship-guidance-for-ai-assisted-inventions），它建立在涉及泰勒訴維達爾（Thaler v. Vidal）的現有判例法（即只有實際的自然人才能被列爲美國專利的發明人）的基礎上，發明人必須是對發明構思做出貢獻的自然人。換句話說，只有人類才能被指定爲美國專利的發明者。與人類發明家不同，人工智慧系統自主運行，並根據演算法和數據輸入產生解決方案。因此，根據現行的美國專利法，他它們不能被視爲發明人，這對獲得人工智慧創新的專利構成了重大障礙。

美國專利商標局指南的一個含義是，真人必須對發明做出重大貢獻。展示重大貢獻的一種方法是透過個人針對特定問題建立工作以從人工智慧系統中得出特定解決方案的方式。儘管如此，「重大貢獻」的確切構成可能有點模糊，而且要針對具體情況，美國專利商標局的指南在各種情況下的應用方式將在美國法院進行辯論。

美國專利商標局指南的另一個意義是，發明人可以爲人工智慧輔助的創作申請專利。正如美國專利商標局指南所述，如果發明人能夠證明他或她爲讓人工智慧產生使遙控汽車能夠運行的特定設計所做的工作，那麼這可能會打開專利之門。實際結果是，當創建新的設計、藝術品、發明、小說甚至電腦程式碼時，人類可以使用基於人工智慧的系統來協助創建該內容，但必須確保他們充分參與在此過程中。

值得注意的是，美國專利商標局的指導意見並不要求發明人披露人工智慧的使用情況，這可能會導致隱瞞人工智慧的參與等問題，並鼓勵所謂的專利流氓申請廣泛的專利，而這些專利不會導致任何結果。

總之，雖然人工智慧在推動創新和重塑產業方面具有巨大潛力，但美國專利商標局的發明人標準對獲得人工智慧技術的美國專利構成了重大障礙。最終，美國專利法在人工智慧背景下的演變將塑造技術創新和社會進步的未來。

Patentability of AI in United States

In today's rapidly evolving technological landscape, artificial intelligence (AI) has emerged as a transformative force across various industries. From enhancing efficiency in manufacturing to revolutionizing healthcare diagnostics, AI applications have become ubiquitous. However, despite its groundbreaking capabilities, there exists a contentious issue surrounding the patentability of AI technology. While innovators seek to protect their AI inventions, the United States Patent and Trademark Office (USPTO) presents significant challenges in obtaining U.S. patents for AI-based innovations. This article delves into the reasons why AI cannot be patented by the USPTO and explores the implications of this limitation.

One of the fundamental requirements for patentability is the identification of an inventor. According to the USPTO guidance published at the Federal Register on February 13,2024 (see https://www.federalregister.gov/documents/2024/02/13/2024-02623/inventorship-guidance-for-ai-assisted-inventions),which builds on existing case law involving Thaler v. Vidal (i.e., only actual people can be listed as inventors on U.S. patents), an inventor must be a natural person who contributes to the conception of the invention. In other words, only a human being can be named as an inventor on a U.S. patent. Unlike human inventors, AI systems operate autonomously and generate solutions based on algorithms and data inputs. As such, they cannot be recognized as inventors under current U.S. patent laws, which pose a significant obstacle to obtaining patents for AI-generated innovations.

One implication from the USPTO guidance is that a real person must have made a significant contribution to the invention. One way to show the significant contribution is through the way the person constructs the work in view of a specific problem to elicit a particular solution from the AI system. Still, precisely what constitutes a "significant contribution" can be a little bit fuzzy and case-specific, and much of how the USPTO guidance is applied in various situations will be debated in U.S. courts.

Another implication from the USPTO guidance is that inventors can patent AI-assisted creations. As illustrated by the USPTO guidance, if an inventor can show that the work he or she did to get the AI to produce a specific design that enabled the remote-control car to function, then that could open the door to a patent. The practical result is that, when creating a new design, artwork, invention, novel, or even computer code, a human can use an AI-based system to assist in the creation of this content, but must make sure that they are sufficiently involved in the process.

It is worth noting that the USPTO guidance does not require inventors to disclose the use of AI, which can lead to issues such as concealing the involvement of AI, and encouraging so-called patent trolls to apply for broad patents that does not lead to any actual creations but merely serve as the foundation for patent litigations.

In conclusion, while AI holds immense potential to drive innovation and reshape industries, the USPTO's criteria for inventorship pose significant hurdles to obtaining U.S. patents for AI technology. Ultimately, the evolution of U.S. patent law in the context of AI will shape the future of technological innovation and societal progress.