Published on *The National Law Review* https://natlawreview.com

Artificial Intelligence and the Patent Application Process: A Synopsis of the Potential Benefits and Risks

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The use of artificial intelligence ("AI") tools in the patent application process gives rise to a vast array of risks and opportunities for intellectual property ("IP") practitioners and society at large.

IP practitioners have used computer tools to research and prepare patent applications for years. For example, attorneys use word processing tools to draft and edit virtually every written document and routinely use search engines and internet resources to conduct research. Unsurprisingly, no rule forbids using such computer tools in the patent application process, so long as the use complies with applicable statutes and rules. Likewise, there is no rule specifically governing the use of AI to research or prepare patent applications and supporting materials. Still, practitioners choosing to utilize AI must be careful to maintain compliance with existing rules that they could breach by irresponsible use.

In October 2023, President Biden issued an Executive Order on the Safe, Secure, and Trustworthy Development and Use of AI. Under that Order, the United States Patent and Trademark Office ("USPTO") issued guidance in April 2024 for navigating the responsible use of AI tools in practice before the USPTO. In its guidance, the USPTO expressed a commitment to maximizing the benefits of AI while recognizing the need to "cabin risks arising from the use of AI in practice before the USPTO." This article provides a broad overview of several potential use cases for AI in the patent application process, as well as the benefits and risks associated with such usages.

The Use of AI in Document Drafting

The advancement of AI tools designed specifically for use in the patent application process has the potential to revolutionize the work of IP practitioners. Large Language Models ("LLMs"), such as ChatGPT, represent a specialized class of generative AI tools that uses language processing algorithms to understand and generate language. LLMs have the potential to provide immense value to IP practitioners because the software can be trained to understand and follow specific formatting, style, and structural requirements for a given document type. In fact, there are already over a dozen AI-powered tools designed specifically for drafting patent applications.

Recently developed LLMs such as davinci, Rowan, and others promise to reduce the amount of work

needed to draft patent applications and responses to Office actions. These tools can significantly improve the efficiency of document drafting by providing a workable response within seconds of entering a prompt. The accuracy and usability of the AI system's output depend on several factors, including the quality of the system's training data, the complexity of the task, and the adequacy of the user's input. According to a 2023 report by McKinsey, the legal sector, in particular, has immense potential to realize gains in productivity through the adoption of AI. In its most recent guidance on the use of AI, the USPTO recognized that newly developed generative AI tools "possess the ability to draft technical specifications, generate responses to Office actions, write and respond to briefs, and even draft patent claims" with minimal human input. By reducing the amount of time and work needed to produce these documents, IP practitioners should be able to reduce the cost of services, thus improving access to patents for inventors at large.

While the potential benefits of the responsible use of AI are significant, so too are the risks associated with the irresponsible use of such tools. Attorneys have no obligation to disclose that they used AI to draft documents submitted to the USPTO. However, the USPTO's rules require a human person to sign nearly every submission to its office. Under 37 CFR 11.18(b)(1), the signature certifies that all statements to the party's own knowledge are true and that the party performed an inquiry reasonably under the circumstances. Since AI systems are known to omit, misstate, or confabulate information, practitioners should review every document generated through the use of AI for accuracy. Because unchecked reliance on the AI tool does not constitute a reasonable inquiry, failure to correct mistakes made by an AI tool could lead to disciplinary action. To eliminate the risk of submitting a false statement, practitioners must independently verify the accuracy of AI-generated text.

The Use of AI in Research

Practitioners are increasingly using AI tools for a variety of research-related tasks, including prior art searches and predictive analyses of examiner behavior. USPTO examiners are already using AI-powered tools such as More Like This Document and Similarity Search to conduct prior art searches when reviewing applications. IP practitioners and patent examiners alike can use AI to reduce the amount of time needed to identify similar characteristics in prior registered patents and pending applications. AI-powered research tools have the potential to improve the accuracy and reduce the average time-cost of prior art searches.

Just as with document drafting, patent practitioners must exercise caution when using AI tools to conduct research. Many AI systems retain data input by users to train the AI model or to share with third parties. Accordingly, when inputting client information into an AI-powered search tool to search for prior art, practitioners should carefully review the system's data privacy policy to ensure that sensitive client data is not being shared. The USPTO updated its rules in May 2021 in part to address emerging concerns related to the disclosure of client information. The added rule, 37 CFR 11.106(d), states that "[a] practitioner shall make reasonable efforts to prevent the inadvertent or unauthorized disclosure of, or unauthorized access to, information relating to the representation of a client." To avoid the risk of confidential disclosure when using AI for research, practitioners should closely inspect the system's data policies and exercise prudence regarding the type of information being shared.

The Use of AI to Access USPTO Systems

In addition to its applications in document drafting and research, AI could be used to interact directly with the USPTO's online services. For example, AI tools could be used to assist in the filing of

documents, autocompletion of forms, or uploading information to USPTO servers. The use of AI to automate certain mechanical aspects of patent application and maintenance has the potential to reduce mistakes and save time by facilitating redundant and predictable tasks with minimal human involvement. While the powerful and ever-expanding capabilities of AI make it an attractive tool for practitioners seeking to work more efficiently, USPTO.gov user policies may impose considerable risk on practitioners using these tools directly with the USPTO's online resources. Accordingly, practitioners should exercise extreme caution to ensure compliance when using AI tools that directly interact with the USPTO's online services.

The USPTO's websites offer a collection of resources and services for researching, filing, and managing patent applications. In order to access many of the USPTO's online services, a user must first register and verify an account with USPTO.gov. This account is exclusive to the individual whose information was registered and may not be shared with others, including AI systems. Practitioners using AI to access the USPTO's online services must be careful to avoid granting unauthorized access to the AI system. For example, only registered users have access to the USPTO's Patent Center tool for filing specifications and other application materials. Therefore, practitioners may not use AI to directly upload and file documents within the Patent Center. Providing an AI tool with access to the Patent Center or other services requiring a USPTO.gov account violates the USPTO's policies, which may, in turn, lead to revocation of the user's account. To avoid account revocation as well as potential civil and criminal penalties, practitioners using AI to interact with the USPTO's online services must always be mindful of the type and scope of access provided to the AI system. Practitioners should generally refrain from using AI to perform any task that requires a USPTO.gov account.

Conclusion

AI has the power to transform the patent application process by bolstering efficiency, enhancing research capabilities, and facilitating automation for a variety of tasks. The responsible use of AI in the patent application process stands to benefit society broadly by enabling examiners and practitioners alike to conduct prior art searches with greater speed and accuracy. Additionally, the advancement of LLMs designed specifically for patent application materials could drastically reduce the average time-cost of drafting specifications, responses to Office actions, and other written documents. Furthermore, AI can be used to facilitate the completion of repetitive and predictable tasks such as collecting data or auto-filling forms. AI's speed, accuracy, and overall utility is constantly improving as these systems are trained on increasingly large sets of available data. Practitioners who leverage the vast capabilities of AI successfully stand to improve the quality and efficiency of service to their clients.

Nevertheless, practitioners using AI must be ever mindful of the various risks associated with its usage.

The USPTO's April 2024 guidance outlines many of the ways in which existing rules and policies apply to the use of AI in practice before the Office. When using AI to draft documents for submission to the USPTO, users must always review the document to independently verify the accuracy and relevance of AI-generated text. When using AI to conduct prior art searches and other forms of research, practitioners should be wary of inputting confidential client information and should carefully review the tool's data policies to prevent inadvertent disclosure. Similarly, practitioners should exercise caution when using AI tools to interact with any of the USPTO's online services. Many of the USPTO.gov tools and services are only accessible to registered users. An AI tool cannot be a registered user and should not be used to access any of the resources reserved for registered users.

The above-mentioned risks do not comprise an exhaustive list; practitioners should always independently assess the risk of implementing a new technology.

AI tools are already being used by patent examiners and IP practitioners alike to perform a variety of tasks within the patent application workflow. As the power of these algorithms grows over time, AI tools are expected to become increasingly capable, accurate, and efficient. Practitioners should look to responsibly implement AI to capitalize on its potential, while appreciating the enduring necessity of human governance in risk mitigation.

This article was co-written by 2024 summer associate Gavin Dacier.

National Law Review, Volume XIV, Number 194