MEMORANDUM

FOR: United States Patent and Trademark Office

FROM: Student Members of Benjamin N. Cardozo's Intellectual Property Law Society

DATE: November 8, 2019

SUBJECT: Comment on Patenting Artificial Intelligence Inventions

---

Students from Benjamin N. Cardozo School of Law's Intellectual Property Law Society (IPLS) held a presentation on Artificial Intelligence (AI) Inventions and Patenting on October 28th for the purpose of collecting students' thoughts on the regulation of AI inventions. Members of IPLS discussed AI inventions, shared examples of modern AI inventors and methods, and looked over the issues presented in the USPTO's Request For Comment (RFC). The primary goal of the event was to write a comment that suggests policies that facilitate innovation, provide a practical standard, and prevent potential abuse.

AI inventions should be patentable

Inventions that are created with contributions from AI should be patentable. With increasing likelihood that AI inventions will be prevalent in modern society, the need for patent law to regulate intellectual property rights is fundamental to the proper structuring of the law surrounding AI. If these types of inventions are rendered unpatentable in the United States, while patent protections are potentially being afforded in other countries, U.S. innovation will be structurally disadvantaged on the global stage. Having the ability to patent AI inventions in other countries, but not the U.S. will deprive the U.S. government of regulatory authority over the enforcement of patents. AI inventions offer the potential of enhancing the rate of innovation in a

number of industries. If the U.S. does not encourage this method of innovation and other countries do, U.S. industries will fall behind their foreign competitors in both their respective industries and AI, due to a lack of incentives from patent protections to develop AI.

AI systems should not be granted inventorship status

At this time, we strongly recommend not granting inventorship status to AI systems. Granting inventorship to an AI would be an embodiment of the grant of property rights, and under American jurisprudence, an AI is not recognized as a potential property holder. Therefore, granting inventorship status to AI is incompatible with notions of independent and sovereign ownership rights, and to deem an AI an inventor would require the implementation of laws better left to the legislature.

As Stephen Hawking said, "[s]uccess in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks." Granting an AI inventorship status would contribute to the perceived risks Dr. Hawking is concerned with. USPTO guidelines should clarify that AI is a tool of the human/corporate operator, rather than an inventor. AI is not a recognizable owner of property, and by extension, AI should not be a recognizable owner of intellectual property. Rather, the natural persons who own and operate the AI that contributed to the invention should be recognized as inventors instead of the AI. By granting inventorship to the owner of the AI, innovation of AI technology will be encouraged and AI operations independent of human guidance will be discouraged.

The most significant consideration undertaken when addressing inventorship status is who contributed to the claimed invention's conception. MPEP § 2137.01. This presents an issue when an AI participates significantly in the conception of an invention. Dabus is an example of an AI

that can originate new ideas without any clear objectives. Dabus' creator insists that he takes no part in the conception of the invention and has no knowledge of the fields in which Dabus has invented. Therefore, he argues, Dabus is the sole and rightful owner of the potential patents which are created. As the USPTO is aware, an individual who contributed to the conception of an invention cannot renounce inventorship status, as the removal of inventorship status would deem the inventorship incorrect. MPEP § 2137.01. In the case of Dabus and other artificially intelligent inventors, the default inventorship status should fall back to the natural person who owns and operates the AI, as is consistent with the view of AI as a tool rather than an inventor.

Moreover, a patent right is an exclusionary right that can be enforced by the patent holder against other parties. For this right to be executed, there is an assumption that litigation could ensue as a result. Under current American jurisprudence, an AI does not have standing to sue. If an AI was granted patent inventorship status there is no reason that they could not also be considered the owner of the patent under proper circumstances. Since AI systems do not have standing, they would have no formative method of enforcing their exclusionary right that was granted to them by patent ownership. Thus, the grant of inventorship status to an AI would prove to be devoid of value.

When to grant natural persons inventorship for AI inventions

If the work of a natural person contributes to the claims of the patent application, that person should be listed as an inventor. MPEP § 2137.01. Individuals in a number of roles participate in the development of an AI invention. Developers, system operators, data providers, and trainers among others may be involved, even if they are not in roles associated with inventorship in fields outside of AI. With the use of AI as an inventive tool, many aspects of

conception will be delegated to AI. Even under these circumstances, the input of human inventors will be significant. A natural person may contribute by:

(1) setting the parameters for the AI;

(2) conceiving of the idea that the AI executes;

(3) owning or developing the AI;

(4) training the AI which produces the invention; or

(5) providing training data.

Setting the parameters for AI is crucial to ensuring the development of usable inventions. Parameters too broadly set will likely lead to the AI inventing a large number of products of a lower quality; too narrow and the AI will be restricted in its ability to innovate. Because of the possible deleterious effects of mishandling the parameterization of AI, it is reasonable to consider the person(s) who set parameters as inventors of an AI invention.

For many AI inventions, the AI requires a natural person to initiate the inventing process. Therefore, inventorship should also be granted to individuals who conceive of the core ideas that substantially contribute to the AI invention.

Owners or developers of AI significantly contribute to the development of AI inventions, even if they did not task the AI with inventing a specific invention. It is possible that the AI developer and the AI itself are the only parties who contributed to an invention. Under these circumstances, the sole inventorship should be assigned to the owner or developer of the AI.

Training an AI is another important step in the process of developing AI inventions. Training entails "teaching" AI whether an output has utility and how to better develop future iterations. This contribution should confer the status of inventorship upon the person who provides substantial data for training or substantially trains the AI.

However, there are natural persons who play a role in the creation of AI inventions whose contributions are not substantial and should not be granted inventorship status. Where the AI resides physically or where its invention generating process runs is immaterial to inventorship status. When datasets are generated from crowdsourced techniques, the contributions of members of the crowd are not sufficient to grant inventorship status.

Further, if a company wants to license out its AI to a second company and that second company wants to be the sole owner of the resulting invention, this can be achieved through assignments and contract law. No further change in inventorship regulation would be necessary. This method of contracting out inventorship further facilitates the improvement of AI, the quality of AI inventions, investment in AI, and the industries utilizing AI.

Special considerations for AI inventions

Without effective procedural rules to govern AI inventions, there is potential for abuse, particularly with regard to mass-produced art by AI. Already, some companies, such as Cloem, have been using AI to generate patents in an attempt to prevent adjacent patent claims. It is foreseeable that a company could use this technique to generate massive amounts of prior art for the express purpose of rendering potential future inventions unpatentable. When considering how to process AI generated patents, procedural rules should be implemented that would discourage patent trolls from generating mass amounts of art via "brute force" computing. By discouraging prior art abuse, the USPTO would be discouraging large AI enabled companies from stalling innovation in their fields.

The USPTO should attempt to prevent "Brute Force Prior Art Creation" with an early stage procedural rule. When a patent examiner rejects a patent application on prior art grounds, a

persuasive traversal of this rejection should be remarks showing that the prior art was a result of "Brute Force Prior Art Creation." This can be done by examining where the prior art was published and in what manner. If the prior art was published on an unindexed website with a large repository of similar art, the potential for abuse is high and thus should not be recognized as prior art.