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July 15, 2023

The Honorable Thom Tillis, Ranking Member
Subcommittee on Intellectual Property
Committee on the Judiciary
United States Senate United States Senate
Washington, DC 20510

Dear Ranking Member Tillis:

Thank you again for the opportunity to testify before the Subcommittee, and for the opportunity to respond to further written questions.

1. Under current U.S. patent law AI cannot be named as an inventor.

a. **What is the motivation and benefit of attempting to change patent law to allow an AI to be named as an inventor?**

Under current U.S. patent law, patent applications require a natural person inventor to be listed who must have "conceived" of an invention. In cases of AI-generated inventions lacking such a natural person, this renders the invention unpatentable in a manner antithetical to the purpose of the patent act.

If Congress changes the law to allow protection of AI-generated inventions, this could be accomplished in various ways. The Patent Act could be amended to allow no inventor to be listed, to allow an artificial person such as a corporation to be listed, to allow a non-traditional human inventor to be listed (e.g., an AI owner), or to allow an AI to be listed as an inventor. Listing an AI as the inventor of an AI-generated invention has the benefit of promoting transparency and informing the public of how an invention was made, and it prevents people from taking undeserved credit. This would not be unfair to an AI of course, but it would devalue legitimate human ingenuity and equate the work of true inventors with someone simply asking a machine to solve a problem. Finally, listing an AI as the inventor would facilitate ownership determinations, depending on who owns an AI-generated invention (e.g., the AI's owner).

b. **What impact, if any, would this have on innovation – in other words, do you foresee some detriment to innovation due to AI not being able to be named an inventor?**

There is detriment to AI not being able to be named an inventor. This currently has the effect of rendering an entire class of otherwise patentable subject matter unpatentable. This is a current problem, as evidenced by *Thaler v. Vidal*, and it is going to be an increasingly serious problem as AI continues to improve at solving technical problems. Failure to provide patent protection to AI-generated inventions risks undermining the inventive economy by discouraging the use and development of AI in R&D, discouraging AI owners from disclosing inventive output (and to keep it as a trade secret), and discouraging the commercialization of new products based on AI-generated inventions.

c. **If an AI alone cannot be named inventor, what are your thoughts regarding allowing an AI to be named as a co-inventor if named alongside that which we currently consider an inventor (i.e., a "natural person")?**

An AI should be listed as a co-inventor if it has functionally co-invented, namely by jointly conceiving of an invention. This would ensure inventions jointly conceived by natural persons and AI are patentable which may not be the case if a natural person did not fully and independently conceive of the entire invention. It would also promote transparency as discussed above, and it would provide incentives to use and develop AI to generate socially valuable innovation.

2. The Intellectual Property Office of Singapore has promoted the patenting of AI-related inventions by offering accelerated examination.

Do you think that the USPTO should be doing more to encourage and support AI-related patent applications in the U.S.?

No comment at this time.

3. In February 2023 the USPTO issued a request for public comments (RFC) seeking stakeholder input on the current state of AI technologies and inventorship issues that may arise in view of the advancement of such technologies.

a. What were your key takeaways from this RFC?

I submitted written comments to the RFC: https://www.regulations.gov/comment/PTO-P-2022-0045-0040. My key takeaway is that the USPTO has recognized the importance of AI in the inventive process and is actively thinking through its implications and what policies can best promote innovation. Additionally, the RFC explores challenges associated with joint inventorship between a natural person and an AI system, which absent Congressional intervention may also be a basis for denying patents for otherwise patentable inventions.

b. Was there anything that wasn't addressed that should have been?

I recommend obviousness as an area of focus. The extent to which the person skilled in the art should evolve based on the use of AI, as well as the use of other frontier technologies, combined with an increasing shift to team-based research and development, merits serious consideration.

4. With regard to patent eligibility law, do you agree that the lack of certainty hampers innovation when it comes to the field of AI-related patent applications and patents?

Yes. Currently, the line between an unpatentable AI-generated invention and a potentially patentable AI-assisted invention is unclear. It is also unclear whether and to what extent an AI functionally acting as a coinventor may render an invention unpatentable, or render certain claims in a patent invalid. Certainty is critical to attracting investment and encouraging business activity, particularly in the life sciences where patents are a critical mechanism to incentivize research and development.

5. Patent Examiners at the USPTO currently use an agency search tool called Patents End to End (PE2E) to perform prior art searches. This tool leverages AI and is being developed to further support AI search capabilities.

a. What are your thoughts on this?

No comment at this time.

b. How else should the USPTO leverage AI to help with prior art searches?

No comment at this time.

6. Do you agree that recognizing an AI as an inventor would require statutory changes to Section 103 to adapt the obviousness test to AI? If so, what would be the most appropriate and feasible way to assess whether a claimed invention would be obvious to an AI?

No. Whether an AI can be an inventor should not be relevant to the test for obviousness. Obviousness is based on the standard of the person having ordinary skill in the art (PHOSITA), who essentially represents an average researcher in a particular field. If this hypothetical worker would find an invention obvious, then that invention cannot receive a patent. However, the PHOSITA standard is explicitly *not* based on what an inventor would find obvious, because this would render too much obvious. Inventors and inventive activity are supposed to be exceptional.

Whether the PHOSITA standard needs to evolve to include the use of AI or inventive AI should depend on how AI is actually being used in a particular field. For example, it may be that in drug discovery, the average researcher routinely uses AI with certain problem-solving capabilities. If this is so, as a factual matter, then the PHOSITA in this field should be represented by an average researcher using such AI. Perhaps in the long term, if certain fields or subfields of research become routinely *automated*, so that most research is AI-

generated, the PHOSITA standard in those areas may be represented by an average researcher using an inventive AI, or just an inventive AI.

Today's PHOSITA standard is inherently challenging to administer because it often involves subjective reasoning about what a hypothetical person would have found obviousness, in hindsight, and with the benefit of reference to a patent application that has already solved a technical problem.

By contrast, the inquiry into what an AI would find obvious could be a more objective test. This was the topic of my article *Everything is Obvious*, published in 2019 in the UCLA Law Review. In brief, an existing vein of critical scholarship has already advocated for obviousness inquiries to focus more on economic factors or objective 'secondary' criteria, such as long-felt but unsolved needs, the failure of others, and real-world evidence of how an invention was received in the marketplace. AI may provide the impetus for such a shift.

Nonobvious inquiries utilizing an AI-based PHOSITA standard might also focus on reproducibility, specifically whether commonly used AI could reproduce the subject matter of a patent application with sufficient ease. This could be a more objective and determinate test that would allow the USPTO to apply a single standard consistently, and it could result in fewer judicially invalidated patents. A nonobviousness inquiry focused on either secondary factors or reproducibility may avoid some of the difficulties inherent in applying a 'cognitive' inventive machine standard.

7. <u>There has been talk regarding whether advances in AI warrant a sui generis ("of its/their own kind") IP protection – a new form of IP protection separate from patent, copyright, trademark, and trade secret – for data rights.</u>

<u>What are your thoughts on this?</u>

I disagree a sui generis system would be beneficial. It creates a double standard for activity by AI versus activity by a natural person. The problem with a double standard is, depending on how it is structured, it will create an artificial incentive to prefer the use of either an AI or a natural person because one or the other will result in greater property rights. Instead, businesses should be encouraged to use an AI or a natural person, or both, for R&D depending on which is more effective at innovating rather than which results in greater legal benefits. Optimal activity may be a mix of human and AI-activity.

There are many areas in which the law artificially discriminates between AI and human behavior. For instance, it does so in favor of human behavior in the context of denying patents for AI-generated inventions. It does so in favor of AI behavior in the context of payroll taxes, where businesses have to pay additional taxes to have natural persons perform the same activities as an AI. As a general matter, this results in harmful outcomes, such as by discouraging the use of AI to generally socially valuable innovations and by encouraging businesses to automate just to save on taxes. In general, the public would benefit from technologically neutral laws that do not create unintended incentives in favor of AI or human behavior.

8. <u>Given where AI now stands in practice – its's a powerful tool that speeds the innovation process, but it does not itself innovate – what specific regulatory and/or legislative action should be and should not be taken this Congress?</u>

As discussed at greater length in my earlier written testimony, I would disagree with this statement as a factual matter. AI does not innovate without being told to innovate, but functionally some AI, in certain contexts, is capable of stepping into the shoes of human inventors and generating new inventions in circumstances such that no natural person qualifies as an inventor. AI will only continue to improve with time, to the point where inventive AI will be socially disruptive in the same way we are now seeing with creative AI systems such as GPT4 generating new text, images, and music.

The time for Congress to act is now. Not only are patents currently being denied for AI-generated inventions, but appropriate frameworks are needed now to encourage today's investments in the AI of tomorrow. Investors also need certainty that the use of AI in the R&D process is not going to render future patents invalid, including in future litigation.

9. <u>With jurisdictions appearing to require disclosure of AI operation, including source code, for software-based innovations is trade secret a viable option for the protection of AI code? And if not, are there steps that regulators and governments can take to help make AI code subject to trade secret protection?</u>

No comment at this time.

Thank you for the opportunity to provide these comments. I support the Subcommittee's efforts to improve the patent system and I look forward to a continuing dialogue on this very important subject.

Respectfully Submitted,