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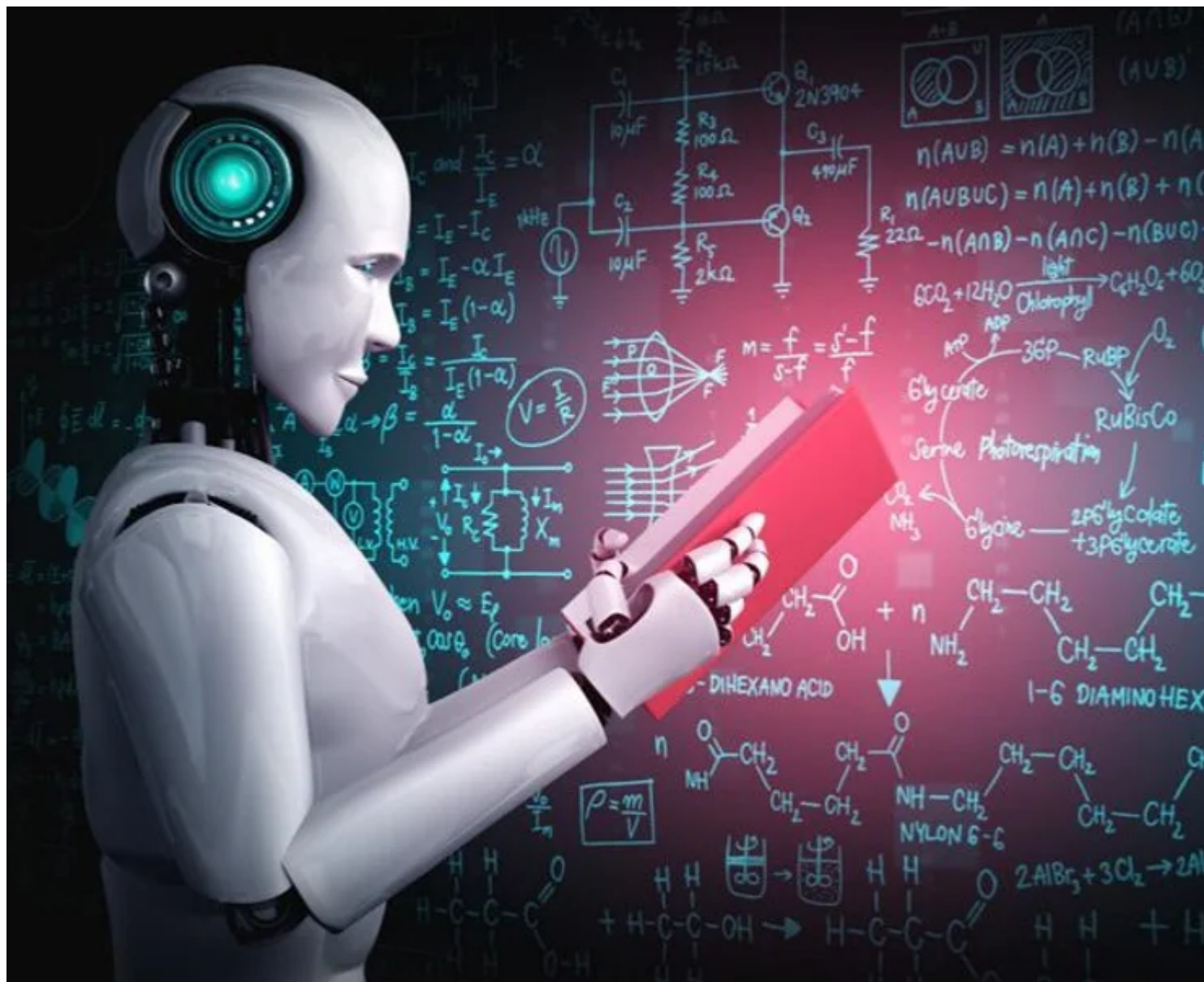
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Can Artificial Intelligence be Inventors under Current Patent Law?

By: Sarah Alexandra Batterman



As technological developments in artificial intelligence (AI) develop, so have questions as to what AI's role should be within the larger universe of intellectual property.[1] For instance, in U.S. patent law it is normally the person who conceives of the invention who has the right to be named the inventor of the patent and thus afforded patent protection.[2] "Conception" requires an inventor to have a specific solution to a problem and is considered to be accomplished only when the idea is so clearly defined in the inventor's mind that "only ordinary skill would be necessary to reduce the invention to practice, without

extensive research or experimentation.”[3] However, some AI have advanced to the point where they can currently conceptualize and produce inventions with minimal help from humans.[4] Computer scientist Dr. Thaler brought this issue to the national level when he filed two patent applications in seventeen different countries listing his AI software, the Device for the Autonomous Bootstrapping of Unified Sentience (DABUS), as the sole inventor.[5]

Thaler describes DABUS as a “creativity machine” that “uses a series of neural networks to ‘think’ and create novel inventions”.[6] He maintains that DABUS was the sole inventor of the following two inventions:

(1) a ‘fractal container’, designed to allow for coupling of multiple containers, improve grip, andimprove heat transfer; and (2) a ‘neural flame’, a flashing light designed to emit a uniquelyidentifiable light signal that attracts enhanced human attention.[7]

Thaler argues that anyone having skill in this field could have used DABUS’s output and translated the concepts to practice. [8] He claims he did just that; he did not contribute to the conception of these inventions but instead simply acted as DABUS’s “translator”.[9] Thus, when submitting patent applications for these inventions, Thaler assigned DABUS as the sole inventor.[10] In the applications, he otherwise attached all the documents relevant to inventorship.[11] First, to satisfy the 35 U.S.C. § 115 requirement that “inventors submit a sworn oath or declaration when applying for a patent,” Thaler submitted a statement on DABUS’s behalf.[12] Second, Thaler also provided a supplemental “Statement of Inventorship” to explain how DABUS operated and assigned himself all of DABUS’s rights as an inventor.[13]

Regardless, the U.S. Patent and Trademark Office (USPTO) rejected both applications because they “lacked a valid inventor”.[14] The USPTO reasoned that under the Patent Act, an inventor must be a human being.[15] Thaler contested the exclusion, arguing that “inventor” when interpreted in the broader context and purpose of the Patent Act, “[t]o promote the progress of science and the useful arts”, may include nonhuman entities.[16] The district court disagreed and affirmed the USPTO’s reasoning.[17] Thaler then appealed the judgment which was then accepted by the U.S. Court of Appeals for the Federal Circuit.[18] The key issue on appeal was defining Congress’ intent in using the term “individual” in the Patent Act. [19]

On appeal, the Federal Circuit utilized a narrow and textualist approach. The Circuit avoids making a judgment on this issue, saving that role for legislature if they choose to. In fact, the Federal Circuit stated on the outset of its opinion that,

[a]t first, it might seem that resolving this issue would involve an abstract inquiry into the natureof invention or the rights, if any, of AI systems. In fact, however, we do not need to ponder thesemetaphysical matters. Instead, our task begins – and ends – with consideration of the applicabledefinition in the relevant statute.[20]

Thus, all that is relevant to the Federal Circuit is the language of the relevant statute and the Patent Act is unambiguous in only allowing natural persons to be an inventor, thereby excluding patent protection for inventions where the sole inventor listed is an AI system.[21]

While the ability to own a patent in the U.S. is premised on personhood, it is possible for non-persons to be granted certain narrowly defined rights (like livestock or wildlife), for the purpose of providing a benefit for humans or to regulate

human conduct.[22] Therefore, whether AI should be accredited as an inventor in a patent application is a question of what would be the benefits for humans in doing so.[23] An AI never exists in isolation but forms part of a larger whole which involves hardware and humans.[24] A determination of whether something is under control of something, or someone, becomes difficult when the system is complex and interconnected with other systems.[25] Thus, Congress would have to reconsider who exactly would receive ownership of the patent and what level of human involvement is necessary to receive that ownership when these issues may not even be causing concerns that need to be dealt with yet.[26] The majority experts in this area believe that U.S. patent law is currently equipped to handle inventorship of AI systems.[27] But as AI becomes more advanced and interconnected, Congress may be forced to amend patent law to determine how and who to accredit patent protection.[28]

Thaler argues that the time to amend inventorship law has already come.[29] In September, he appealed the Circuit's decision stating,

...[t]he Panel Opinion should have wrestled with the ambiguity created by technologicalevolution, and the results that flow from prohibiting patents on AI-generated inventions.Machines can outpace humans in generating intellectual property, thus producing unprecedentedglobal prosperity that could lead the way to an economy in which people strive to improvethemselves rather than brutally competing against others for wealth and resources. I believe thatwould amount to a better, but still not perfect world.[30]

Although the Federal Court's decision will most likely be affirmed, Thaler is likely to seek further review from the Supreme Court.[31]

The sixteen other jurisdictions Thaler submitted his patent applications also examine the hotly debated matter whether AI software can be listed as the inventor on a patent application.[32] Currently the United Kingdom (U.K.) appeals court, the European Patent office (EPO), and the Federal Court of Australia, have declined to allow AI to be listed as an inventor on a patent application, with the EPO rejecting Thaler's most recent appeal.[33] However, Thaler's appeal to the U.K. Supreme Court was granted, and in Australia, Thaler has appealed its decision to the High Court which is likely to be heard this November. Other jurisdictions have identified more favorable alternatives for Thaler.[34] Germany provided an option to "get around the current legal impediment" whereby Thaler would list himself as the inventor while acknowledging that DABUS contributed to the idea.[35] Yet, the most noteworthy exception so far has been in South Africa, where they granted a patent listing DABUS as the sole inventor.[36] While South Africa is the first nation to do so, it also is a non-examining nation.[37] Thus, any patent application submitted there that satisfies the formal examination, which simply requires the application forms and fees with the specification documents attached, will result in a grant.[38] Additionally, "many IP experts have criticized the decision and called it an oversight by the Patent Office." [39]

Thaler's battle is far from over. Thaler is still waiting to see if the patents he filed in eleven other nations will be accepted.[40] He might even bring another lawsuit if they are rejected.

Sarah Alexandra Batterman is a Staff Editor at CICLR.

[1] U.S. Patent and Trademark Office, *Public Views on Artificial Intelligence and Intellectual Property Policy* (2020).

[2] *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227-28 (Fed. Cir. 1994).

[3] *Id.*

[4] Ali Mohammad Saghiri, S. Mehdi Vahidipour, Mohammad Reza Jabbarpour, Mehdi Sookhak & Agnostino Forestiero, *A Survey of Artificial Intelligence Challenges: Analyzing the Definitions, Relationships, and Evolutions*, 12 APPL. SCI. 1, 1-21 (2022).

[5] Utkarsh Patil, *India: South Africa Grants a Patent with an Artificial Intelligence (AI) System as the Inventor – World’s First*, MONDAQ (Oct. 19, 2022), <https://www.mondaq.com/india/patent/1122790/south-africa-grants-a-patent-with-an-artificial-intelligence-ai-system-as-the-inventor-world39s-first>, [<https://perma.cc/U8WS-MD2J>].

[6] Sanjaya Mendis, Samantha Wasserman, & Chuck Rothman, *AI and Patent Law: Can AI Be an “Inventor”?*, DMCCARTHY TETRAULT LLP (May 31, 2022), <https://www.mccarthy.ca/en/insights/blogs/techlex/ai-and-patent-law-can-ai-be-inventor>, [<https://perma.cc/L6YH-LXXX>].

[7] *Id.*

[8] *Thaler v. Vidal*, 34 F.4 1207, 1209-10 (Fed. Cir. 2022).

[9] *Id.*

[10] *Id.*

[11] TechSpeak Alert, *Federal Circuit Confirms Inventor Must be Human Not AI*, AKIN GUMP LLP (Aug. 11, 2022), <https://www.akingump.com/en/news-insights/federal-circuit-confirms-inventor-must-be-human-not-ai.html>, [<https://perma.cc/BL5W-BF6Y>].

[12] *Id.*

[13] *Id.*

[14] Holland & Knight LLP, *Revisiting AI Inventorship In Thaler v. Vidal*, JDSUPRA (Oct. 4, 2022), <https://www.jdsupra.com/legalnews/revisiting-ai-inventorship-in-thaler-v-3043929/>, [<https://perma.cc/Q367-D6TM>].

[15] *Thaler v. Hirshfeld*, 558 F. Supp. 3d 238, 242-43 (4th Cir. 2021).

[16] *Id.* at 248.

[17] *Id.* at 250.

[18] *Thaler v. Vidal*, 34 F.4 1207, 1208 (Fed. Cir. 2022).

[19] *Id.* at 1210-11.

[20] *Id.* at 1209.

[21] *Id.* at 1210-11.

[22] Eliza Mik, *AI as a Legal Person?*, in *Artificial Intelligence and Intellectual Property* 419, 430 (Oxford Univ. Press ed.,

- 2021).
- [23] *Id.* at 431.
- [24] *Id.* at 424-25.
- [25] *Id.*
- [26] Monika Malek & Daniela H. Shulman, *Thaler v. Vidal: Artificial Intelligence Inventions Create Real Issues*, VEDDER PRICE LLP (Sept. 29, 2022), <https://www.vedderprice.com/-/media/files/vedder-thinking/publications/2022/9/thaler-v-vidal-artificial-intelligence-inventions-create-real-issues.pdf>.
- [27] u.s patent and trademark office, *supra* note 1, at 3.
- [28] *Id.*
- [29] Matthew Horton & Austin J. Kim, *Federal Circuit Rules Inventorship Must be Natural Human Beings*, FOLEY (Aug. 11, 2022), <https://www.foley.com/en/insights/publications/2022/08/federal-circuit-inventorship-natural-human-beings>, [<https://perma.cc/4E2V-HEHZ>].
- [30] Katyanna Quach, *One man's battle to get patent rights for AI inventors in America may be over*, THE REGISTER (Sept. 1, 2022), <https://www.theregister.com/2022/09/01/ai-patent-rights/>.
- [31] Malek & Shulman, *supra* note 26.
- [32] Quach, *supra* note 30.
- [33] John Villasenor, *Patents and AI Inventions: Recent court rulings and broader policy questions*, BROOKINGS (Aug. 25, 2022), <https://www.brookings.edu/blog/techtank/2022/08/25/patents-and-ai-inventions-recent-court-rulings-and-broader-policy-questions/>, [<https://perma.cc/ZFP2-NFBA>].
- [34] Quach, *supra* note 30.
- [35] Villasenor, *supra* note 33.
- [36] *Id.*
- [37] *Id.*
- [38] *Id.*
- [39] Patil, *supra* note 5.
- [40] Quach, *supra* note 30.