

'Natural Person' Or Not, AI-Made IP Deserves Protection

By **Manav Das** (May 17, 2024)

Inventorship, or a lack thereof, for artificial intelligent systems, has now been established under U.S. law, at least for the time being.

The entire legal edifice rests on a determination that an AI system is not a so-called natural person. Although this may appear to be straightforward on its face, rapid advances in technology may soon force us to revisit our understanding of a natural person.

Stephen Thaler's attempts to accord sole inventorship to AI systems has now entered the annals of the history of intellectual property law.



Manav Das

Thaler listed a "device for the autonomous bootstrapping of unified sentience" as an inventor on two patent applications.[1] The U.S. Patent and Trademark Office rejected the applications on the grounds that the Patent Act defines an inventor as limited to "natural persons."

In *Thaler v. Vidal*, the U.S. Court of Appeals for the Federal Circuit affirmed a U.S. District Court for the Eastern District of Virginia decision in a challenge to that decision under Title 35 of the U.S. Code, Section 145, to grant summary judgment to the USPTO.

Thaler appealed to the U.S. Supreme Court, but was denied certiorari last April.

In its 2022 opinion, the Federal Circuit avoided "an abstract inquiry into the nature of invention or the rights ... of AI systems,"[2] and concluded that there is no "need to ponder these metaphysical matters." [3] The Federal Circuit agreed with the USPTO's determination that "the Patent Act defines 'inventor' as limited to natural persons; that is, human beings." [4]

The core legal argument for denying inventorship to an AI system hinges on an interpretation that the statutory requirement for an inventor is to be a natural person.

While the Federal Circuit may well have tossed aside efforts "to ponder these metaphysical matters," the rapid advancements in technologies will soon make it imperative for us to contemplate on more practical "mentaphysical matters," a term I am specifically coining to make my point below.

The U.S. Constitution [5] gives Congress the authority to make laws that "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Nothing in the Constitution explicitly requires authors and inventors to be natural persons.

The Federal Circuit admitted in *Thaler* that the "Patent Act does not define 'individual,'" [6] and relied on the Supreme Court's 2012 *Mohamad v. Palestinian Authority* opinion that states, "when used [a]s a noun, 'individual' ordinarily means a human being, a person." [7]

The U.S. Supreme Court opinion interpreted Title 1 of the U.S. Code to reach the conclusion that "Congress understands 'individual' to indicate natural persons unless otherwise noted." [8]

This brings me to the mentaphysical aspect.

Consider a hypothetical situation where such an individual or natural person has an AI system-on-a-chip, or AISOC, installed in their brain. Also, for the sake of the hypothetical, assume that such AISOC is configured to enhance the person's intellect with greater powers of mental reasoning — e.g., the ability to conceptualize an invention based on elementary thought prompts from the person.

The term "thought prompt" may generally refer to a conscious, subconscious or unconscious thought that is an input prompt for the AISOC, causing it to generate an inventive concept. Also, assume that without the installed AISOC, the individual would lack the ability to conceive of the invention.

The key question becomes: Is the individual with the AISOC a natural person? Clearly, this individual satisfies every definition of being a natural person, under current law and as explained by the Federal Circuit.

Presumably under these circumstances they would be able to list themselves as the inventor. However, considered at a more fundamental level, this individual did not conceive of the invention and therefore cannot be listed as an inventor.

This raises something of a paradox: The individual is an inventor, as a natural person, and at the same time is not an inventor, not having conceived the invention.

This hypothetical is not far from reality. In January, Elon Musk's company Neuralink Corp. implanted the first brain-computer interface into a human brain.[9]

It will not be long before companies begin to produce such chips for different purposes, including for the purposes of AI-assisted intelligence enhancement. As has been reported, the longer-term goal for Musk is human-AI symbiosis.[10][11]

Are we then going to exclude such intelligence-enhanced individuals from rights normally accorded to natural persons?

The U.S. Patent and Trademark Office's inventorship guidance for AI-assisted inventions[12] acknowledges that AI-assisted inventions are not unpatentable for proper inventorship, and places the onus on patent attorneys and inventors to identify the extent of human contributions.

In particular, the guidance states that "[i]n the context of AI-assisted inventions, natural person(s) who create an invention using an AI system, or any other advanced system, must contribute significantly to the invention, as specified by the Pannu factors." [13][14]

On March 25, the AI and emerging technology policy working group at the USPTO provided a more detailed document titled "Inventorship guidance for AI-assisted inventions." [15] This detailed guidance includes three hypothetical scenarios to illustrate how the Pannu factors — a three-part test articulated in *Pannu v. Iolab Corp.* in the Federal Circuit in 1998 — are to be applied to determine inventorship. [16]

I present below a slightly modified version of "Mechanical example - scenario 1" of the three hypothetical scenarios.

Let us assume that Ruth is an individual with an installed AISOC, and Morgan is an individual using an external AI system. Ruth provides a thought prompt that states "create an original design for a transaxle for a model car, including a schematic and description of the transaxle," and Morgan provides the same prompt to the external AI system.

In each case, the outputs from the respective AI systems — which may be assumed to be substantially identical — are reviewed by Ruth and Morgan. Based on a Pannu factor analysis, Ruth, as a natural person, has conceived of and created the invention, and is therefore an inventor.

However, based on the detailed guidance, Morgan's contribution is not considered to be a significant contribution to the conception of the claimed invention.

Accordingly, this reliance on a natural person as an inventor creates an artificial distinction between two individuals using an AI system — one implanted as a brain-computer interface and another being an external AI system. There may be additional privacy concerns, including Health Insurance Portability and Accountability Act-related issues, as to whether Ruth has to divulge the implanted AISOC to the USPTO.

It is likely that AI-assisted inventions are already being patented by human inventors who may not have made a significant contribution to the conception of the invention.

When two humans jointly conceive an invention, and only one of them is named as an inventor on a patent application, the other inventor is likely to discover the omission and seek redress. However, an AI system is unable to do so.

Also, consider that in the event an AI system were to invent something new and useful — e.g., with an immense potential for commercialization — what are the odds that an individual or corporation controlling such an AI system would forgo a patent based on current inventorship guidelines?

The alternative would be to protect it as a trade secret, which may or may not be feasible. And even if the invention could be protected as a trade secret, it is not clear that such practice, over time, will not end up stifling the progress of science, thus undermining Article I of the U.S. Constitution.

As has been noted in several briefs supporting Thaler's Supreme Court petition, the Federal Circuit's decision jeopardizes billions of dollars in investments. Such a decision is likely to create a competitive disadvantage for the U.S. economy by not granting intellectual property rights to legitimate inventions.

Technology, especially in the realm of AI, is progressing rapidly. In parallel, quantum computing is making steady advances.

That day is not far when the combined effect of these, along with advancements in the chip industry, will revolutionize the way we view society, much like smartphones have done over the last two decades, but with a significantly greater impact.

Instead of fearing AI, we need to embrace it and design laws that are futuristic and allow human enterprise to keep progressing and moving our civilization forward.

Having to apply a natural person label to an individual is likely to become subjective and paradoxical in the context of inventorship. Having to decide on relative contributions of an

individual and an AI system is likely to be arbitrary, subjective, or worse, to be subject to abuse.

As the Federal Circuit observed in *Thaler*, "the Supreme Court has held that, when used in statutes, the word 'individual' refers to human beings unless there is 'some indication Congress intended' a different reading."^[17] It is indeed time for Congress to indicate a different reading for a natural person, at least in the context of the Patent Act.

It may be more beneficial to society to either allow an AI system to be named as a sole and/or joint inventor — so that all worthy inventions, if so desired, can see the light of day in patent applications.

Alternatively, it may be more beneficial to statutorily create an invention made-for-hire doctrine borrowed from copyright law^[18] — to allow an invention to be attributed to individuals that own and/or control the AI system that creates the invention.

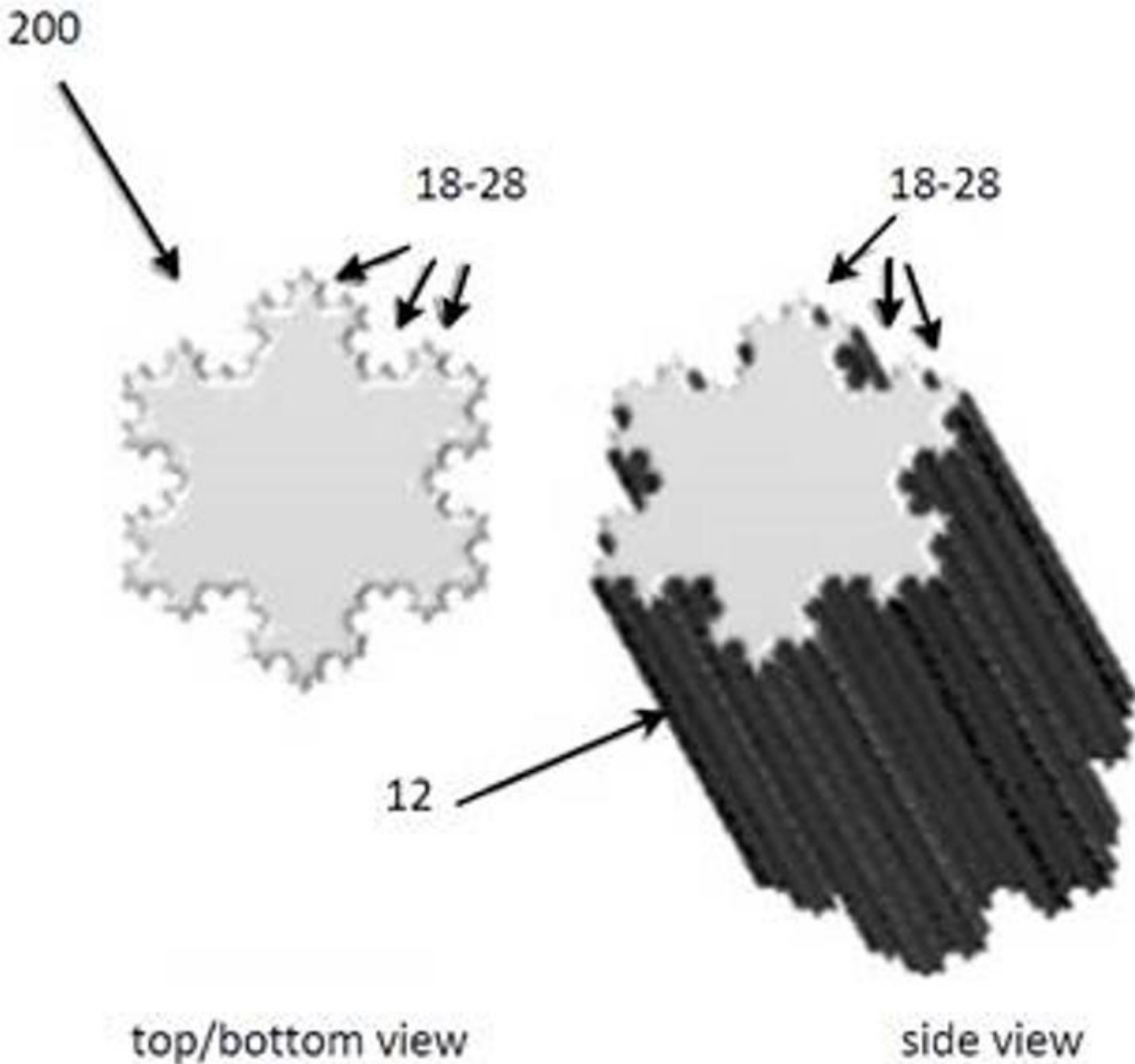
In the first instance, when an individual uses an AI system to create an invention, and the AI system makes a significant contribution, then both the individual and the AI system can be listed as joint inventors.

In the second instance, even when an AI system makes a significant contribution to an invention, the invention itself can be attributed to the individual that controls the AI system — e.g., design and/or train the AI-system, provide prompts, etc.

The focus should be squarely on enabling the protection of inventions, regardless of whether they are created by an individual or a machine. All else is mere semantics. This is how we can "promote the progress of science," as written in the Constitution.^[19]

To end on a personal note, at least one of Thaler's inventions is particularly special to me. Titled "Food Container and Devices and Methods for Attracting Enhanced Attention," the application describes a "wall (12) [that] has a fractal profile which provides a series of fractal elements (18-28)."^[21]^[20]

The image reproduced below illustrates the fractal shape. I spent many years researching fractal geometry, and this convergence with patent law and AI is immensely gratifying.



Manav Das is a partner at McDonnell Boehnen Hulbert & Berghoff LLP. Manav is the vice chair of the U.S. Patent Office Practice Committee of the Intellectual Property Owners Association.

The opinions expressed are those of the author(s) and do not necessarily reflect the views of their employer, its clients, or Portfolio Media Inc., or any of its or their respective affiliates. This article is for general information purposes and is not intended to be and should not be taken as legal advice.

[1] DABUS itself is patented in US7454388. The two applications were U.S. Application Nos. 16/524,350 and 16/524,532.

- [2] *Thaler v. Vidal*, 43 F.4th 1207, 1208 (Fed. Cir. 2022).
- [3] *Id.*
- [4] *Id.*
- [5] U.S. Const. art. 1, s. 8, cl. 8.
- [6] *Thaler* 43 F.4th at 1212.
- [7] *Id.* (quoting *Mohamad v. Palestinian Auth.*, 566 U.S. 449, 454 (2012)).
- [8] Citing *Mohamad*, 566 U.S. at 454.
- [9] <https://neuralink.com/blog/prime-study-progress-update/> (last accessed, April 26, 2024).
- [10] <https://www.bbc.com/news/health-68169082> (last accessed, April 26, 2024).
- [11] <https://youtu.be/4fGYT-gIICA>.
- [12] 89 FR 10043 (February 13, 2024).
- [13] citing *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1351 (Fed. Cir. 1998).
- [14] 89 FR 10043, 10048 (February 13, 2024).
- [15] <https://www.uspto.gov/sites/default/files/documents/inventorship-guidance-for-ai-assisted-inventions.pdf>.
- [16] *Id.* at pp. 28-33.
- [17] *Mohamad*, 566 U.S. at 455.
- [18] 17 U.S.C. § 101 (see, also, <https://copyright.gov/circs/circ30.pdf>).
- [19] U.S. Const. art. 1, s. 8, cl. 8.
- [20] WO2020079499.
- [21] Generally speaking, a "fractal" is a geometric shape with a non-integer dimension. A good introduction may be found in the classic book *The Fractal Geometry of Nature*, by B. B. Mandelbrot, Freeman, San Francisco, 1982.