

---

## ARTIFICIAL INTELLIGENCE IS CHALLENGING THE HUMAN-CENTRIC FOUNDATIONS OF INTELLECTUAL PROPERTY LAW, NECESSITATING A RE- EVALUATION OF AUTHORSHIP AND OWNERSHIP

---

By- Jayant Dayal<sup>1</sup>

### ABSTRACT

The rapid advancement of artificial intelligence (AI) is reshaping the intellectual property rights (IPR) landscape, raising complex questions about authorship, ownership, and legal personhood. This paper examines the evolving challenges posed by AI-generated works, particularly in the realms of copyright and patent law, which have traditionally relied on human creators. It explores landmark international legal decisions, such as the DABUS case, and compares jurisdictional responses across the UK, USA, Australia, South Africa, and China. This paper explores the impact of new technologies such as organic computing, which add complexity to determining creative and inventive responsibility. By examining case law and existing legislative structures, the study highlights the pressing need for policy updates, suggesting a hybrid approach to AI authorship, measures to prevent monopolization, and the establishment of ethical regulatory mechanisms. The research concludes by advocating for proactive legal mechanisms that balance innovation with equitable IP protection in an AI-driven future.

### INTRODUCTION

Field of IPR is one of the most dynamic and constantly evolving of all law fields which is evident from the fact that just two years after the TRIPS Agreement was adopted, the WIPO found it

---

<sup>1</sup>Student, Amity University Noida.

necessary to convene an international conference to address the digital revolution by drawing up a new pair of treaties, the WIPO Copyright Treaty and the associated WIPO Performances and Phonograms Treaty<sup>2</sup>. Besieged by these new creations and practices of the digital revolution, unsettled by the ethical dilemmas thrown up by the patenting of genetically modified plants and animals, and about to be caught out by organic computing, it seems, at least in the eyes of some, that contemporary intellectual property law faces a number of challenges<sup>3</sup>. However, with the advent of newer technologies one theme that re-occurs is that new technologies are forced into existing categories. This dilemma is very succinctly summarised in the following paragraph<sup>4</sup>:

A recurring theme of intellectual property, and especially patents, is that new technologies are forced into existing categories. This is often seen in the way new technologies are named. The automobile was first called a “horseless carriage,” but it wasn’t really a carriage that didn’t have a horse. Rockets that travel out of earth’s orbit are called space “ships.” The radio was first called a “wireless.” In 1942 when the first photocopy machine was patented, the patent examiners didn’t know what to do with it. The title of the patent is “electrophotography.” It was something completely new.

This chapter aims to, having given a very brief introduction to the topic, study the future of IPR by analysing the recent and emerging trends in the field of IPR.

## ARTIFICIAL INTELLIGENCE

Any discussion on artificial intelligence (AI) would be incomplete without reference to John McCarthy, an American mathematician and computer scientist, who coined the term AI in 1956.

---

<sup>2</sup> Charles R McManis, ‘Teaching Current Trends and Future Developments in Intellectual Property’ (2008) 52 *St Louis ULJ* 855, 857.

<sup>3</sup> Brad Sherman and Lionel Bently, *The Making of Modern Intellectual Property Law: The British Experience, 1760–1911* (Cambridge University Press 1999) 1.

<sup>4</sup> Timothy Lee Wherry, *The Librarian’s Guide to Intellectual Property in the Digital Age: Patents, Copyrights and Trade Marks* (American Library Association 2002) 1–2.

He defined the term in very simple terms by stating that ‘AI is the science and engineering of making intelligent machines and is related to the task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable’<sup>5</sup>. From songs to paintings, book chapters, and film scripts, works are already being produced, with the help of technology, that can be enjoyed by humans just as one would admire a Picasso painting or a Rolling Stones composition<sup>6</sup>. More and more innovative programs are breaking down the glass wall and advancing further than anyone could have possibly expected, for example, AI machines are creating movies [like *Sunspring* (2016)], writing novels (like the Japanese AI novel – *The Day a Computer Writes a Novel*), and even creating art (like the Edmond de Belamy portrait)<sup>7</sup>.

When seen in the afore-stated context, one of the most important issues w.r.t. creations of AI/technology are of the ownership in that creation<sup>8</sup>. Another connected issue relates to the decision-making by these AI entities with legal consequences<sup>9</sup>. Both of the afore-stated issues may be covered under a single head that is whether AI can be granted legal personhood. There are three main objections to the recognition of AI legal rights: first ‘only humans should be given personhood rights’; second AI is lacking the ‘critical component’ [this objection claims that AI lacks a certain component that is essential for personhood, and since no AI can possess that component, no AI can qualify for personhood rights], and lastly that ‘AI is property’<sup>10</sup>. What makes

---

<sup>5</sup> John McCarthy, ‘What is AI?’ (Stanford University) <http://jmc.stanford.edu/articles/whatisai/whatisai.pdf> accessed 6 March 2025.

<sup>6</sup> Marcos Wachowicz and Lukas Ruthes Gonçalves, *Artificial Intelligence and Creativity: New Concepts in Intellectual Property* (GEDAI 2019) 12.

<sup>7</sup> Aviv H Gaon, *The Future of Copyright in the Age of Artificial Intelligence* (Edward Elgar Publishing 2021) 1.

<sup>8</sup> Marcos Wachowicz and Lukas Ruthes Gonçalves, *Artificial Intelligence and Creativity: New Concepts in Intellectual Property* (GEDAI 2019) 29.

<sup>9</sup> Marcelo Corrales, Mark Fenwick and Nikolaus Forgó (eds), *Robotics, AI and the Future of Law* (Springer 2018) 18.

<sup>10</sup> Aviv H Gaon, *The Future of Copyright in the Age of Artificial Intelligence* (Edward Elgar Publishing 2021) 37–38.

---

these issues even more problematic and difficult to handle is the fact that in many jurisdictions only humans can infringe a patent<sup>11</sup> and other IPR.

On the issue of granting protection to ‘authorless’ computer-generated works, Section 9(3) of the Copyright, Designs and Patents Act 1988 (United Kingdom) may be a good reference point. The said section accords protection to ‘authorless’ computer-generated literary, dramatic, musical or artistic works and considers ‘the author to be the person by whom the arrangements necessary for the creation of the work are undertaken’. European Patent Office’s (EPO) recent decision<sup>12</sup> may also provide a guidance on the issue of granting protection to AI produced works. In the said decision EPO refused two applications for the grant of patent on the ground that applications had designated an artificial intelligence system called DABUS as inventor in the application forms. EPO ruled as aforesaid because according to Convention on the Grant of European Patents, 1973 (EPC) the designation of the inventor is a formal requirement which a patent application must fulfil according to Article 81 of EPC and Rule 19(1) of EPC.

**Stephen L. Thaler v. Comptroller-General of Patents, Designs and Trade Marks**<sup>13</sup> (hereinafter the **Thaler case**) also relates to the question of whether an AI machine can be called an inventor. This case was also related to artificial intelligence system DABUS. Court of Appeal had dismissed the appeal preferred by Thaler against the decision of UK Intellectual Property Office deeming patent applications filed by him to be withdrawn. The applications were deemed to have been withdrawn because they failed to satisfy Section 13(2) [inventor must submit a statement identifying the inventor] of the Patents Act, 1977 (United Kingdom). In the said applications, Thaler had designated DABUS as the inventor of a food and beverage container and

---

<sup>11</sup> For example, US Patent Law.

<sup>12</sup> European Patent Office, ‘Press Communiqué’ <https://www.epo.org/law-practice/case-law-appeals/communications/2021/20211221.html> accessed 6 March 2025.

<sup>13</sup> *Thaler v Comptroller General of Patents Trade Marks and Designs* [2021] EWCA Civ 1374.

---

methods for attracting enhanced attention. The Court of Appeal held that Thaler was not able to comply with the following statutory requirements:

- i. the inventor must be a person; and
- ii. an applicant who is not the inventor must be able to establish an entitlement to apply for a patent in respect of the invention.

District Court in the United States of America<sup>14</sup> and patent office of New Zealand<sup>15</sup> have also held that DABUS cannot be termed to be an inventor within the meaning ascribed to the term in their respective patent laws. In Australia, even though Federal Court of Australia had granted the status of an ‘inventor’ to DABUS, the decision was reversed by a full bench of the Federal Court<sup>16</sup>. It is clear from the discussion that the world is not yet ready to accord the status of ‘inventor’ on a non-human and grant a patent for computer generated works. However, there is one exception to this. South Africa in 2021 granted patent for the same invention for which patent was denied in the aforementioned countries<sup>17</sup>. The courts may be reluctant to accord the status of an ‘inventor’ on an AI however, the position is very different w.r.t. AI created by humans. Companies have moved very quickly in the direction of patenting their respective AI inventions. For example, researchers at IBM were granted more than 2,300 AI-related patents in 2020 in the USA, which included AI tools for a novel way to search multilingual documents using natural language processing, and an ultra-efficient system for transferring image data taken by an on-vehicle camera<sup>18</sup>. Microsoft and Google also hold 2207, and 1174 US patents respectively in the AI domain<sup>19</sup>.

---

<sup>14</sup> *Stephen Thaler v Andrew Hirshfeld*, Case 1:20-cv-00903-LMB-TCB (ED Va 2021).

<sup>15</sup> *Stephen L Thaler* [2022] NZIPOPAT 2 (31 January 2022).

<sup>16</sup> *Commissioner of Patents v Thaler* [2022] FCAFC 62

<sup>17</sup> Utkarsh Patil, ‘India: South Africa Grants a Patent with An Artificial Intelligence (AI) System as The Inventor – World's First!!’ (MONDAQ, 19 October 2021) <https://www.mondaq.com/india/patent/1122790/south-africa-grants-a-patent-with-an-artificial-intelligence-ai-system-as-the-inventor-world39s-first> accessed 6 March 2025.

<sup>18</sup> Dario Gil, ‘IBM’s Innovation: Topping the US Patent List for 28 Years Running’ (IBM Research Blog, 12 January 2021) <https://www.ibm.com/blogs/research/2021/01/ibm-patent-leadership-2020/> accessed 6 March 2025.

<sup>19</sup> Prinkal and Nidhi, ‘Companies with Most AI Patents – Key Insights and Stats’ (Insights by GreyB, 27 December 2021) <https://insights.greyb.com/companies-with-most-ai-patents/> accessed 6 March 2025.

Though there have not been many cases in which AI has been directly and substantially discussed, there have been judgements by various domestic courts that may be considered as representative of the cases that are likely to arise in the future and will require the courts to contemplate and discuss technologies such as artificial intelligence, machine learning etc. and the impact of the use of these technologies. One such case is **Spokeo, Inc. v. Robins**<sup>20</sup> in which the court had to deal with a ‘people search engine’ and its consequent impact when it provides inaccurate information. This search engine offered access to extensive databases containing personal information about individuals, serving a range of users such as employers assessing potential hires. When Robins found out that his Spokeo-generated profile contained inaccurate information, he filed a federal class-action complaint against Spokeo, alleging that the company wilfully failed to comply with the Fair Credit Reporting Act of 1970. The District Court dismissed Robins’ complaint, while observing that he had not pleaded injury in fact properly. The Court of Appeal for Ninth Circuit reversed the judgement passed by the District Court. The Court of Appeal held that Robins had adequately alleged an injury in fact while noting Robins’ allegation that “Spokeo violated his statutory rights” and the fact that Robins’ “personal interests in the handling of his credit information are individualized”. When the matter reached the Supreme Court, the Court vacated the judgement passed by the Court of Appeal and remanded the matter back to it.

A few cases directly relating to AI have also emerged in the recent past. For example, in **Aerotek, Inc. v. Boyd**<sup>21</sup> Aerotek worked with a software developer to build an online-only hiring application. The computerized hiring application presented to the candidate with employment information and various contracts to sign electronically. After the candidate completes the initial documentation, the application unlocks four additional documents, including a Mutual Arbitration Agreement (MAA). The candidate must complete and electronically sign all four before the

---

<sup>20</sup> *Halo Electronics Inc v Pulse Electronics Inc* 136 S Ct 1540 (2016).

<sup>21</sup> *State v Taylor* 598 SW 3d 373 (Tex App 2020).

---

computerized application will allow him to continue and complete the hiring process. Each time a candidate electronically signs a document the hiring application stores a new electronic record and once the application records that information, Aerotek cannot change it. After their services were terminated, Boyd along-with other, filed a suit against Aerotek and others for racial discrimination and retaliation. Aerotek's motion for arbitration based on MAA was denied by the District Court as well as the Court of Appeal. Supreme Court reversed the order passed by the Court of Appeal and the District Court and held that Aerotek conclusively established that Boyd and others signed, and therefore consented to, the MAAs.

Another case is **Mario Calderon, et al. v. Clearview AI, Inc., et al.**<sup>22</sup> relates to a facial recognition application created by Clearview that according to a New York Times article<sup>23</sup> could end a person's ability to walk down the street anonymously, and provided a biometric database of images scraped off from the internet to hundreds of law enforcement agencies, ranging from local cops in Florida to the F.B.I. and the Department of Homeland Security. The case is currently pending before the District Court. There have been cases dealing with AI in other jurisdictions also. For example, a Full Bench of the Federal Court of Australia dealt with a case in which decision was to be made w.r.t. subsistence of copyright in data sheets generated electronically. Facts leading up to the case of **Acohs Pty Ltd. v. UCorp Pty Ltd. & Anr.**<sup>24</sup> were that - Acohs, and UCorp and Bernard are competitors in the business of producing Material Safety Data Sheets (MSDSs), which are information sheets that set out prescribed categories of information about hazardous substances and dangerous goods. Acohs maintained a large database of information about the aforementioned substances and goods, and created a computer programme that could generate MSDSs. The aforementioned data was entered by the employees of Acohs either by using their own knowledge

---

<sup>22</sup> *Clearview AI Inc v ACLU* Case 1:20-cv-01296-CM (SDNY 2020).

<sup>23</sup> Kashmir Hill, 'The Secretive Company That Might End Privacy as We Know It' *New York Times* (18 January 2020, updated 2 November 2021) <https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html> accessed 6 March 2025.

<sup>24</sup> *RPL Central Pty Ltd v Commissioner of Patents* [2012] FCAFC 577.

or by transcribing information obtained from MSDSs of other providers. UCorp maintained a collection of MSDSs, which were either written by themselves or MSDSs created by other providers (the latter were identical in content and appearance to the original MSDSs from which they were derived). The Court held that as the information sheets had been created by a computer programme, they had no author. Hence, no copyright existed in those works.

Other examples of national courts determining on the issue of AI include the following<sup>25</sup>:

- i. High Court of Australia's ruling that computer generated compilation of weekly television programme schedules was not the subject matter of copyright<sup>26</sup>.
- ii. Copyright and trademark infringement claims w.r.t. a project that uses AI to automatically generate art images and a database of human created works in order to filter for AI output that is similar to human created works<sup>27</sup>. The case is currently pending before Quebec Superior Court.
- iii. A Chinese City Court's ruling which granted protection to an article that was created by an AI program<sup>28</sup>.
- iv. A ruling by China's Supreme People's Court which upheld patent of one Little i Robot. Proprietor of Little i Robot, Xiaoi is pursuing a case against Apple for infringement of its patent by Apple's own AI software 'Siri'<sup>29</sup>.

<sup>25</sup> WIPO, 'Artificial Intelligence and Intellectual Property Strategy Clearing House' [https://www.wipo.int/about-ip/en/artificial\\_intelligence/strategy-search.jsp?territory\\_id=&policy\\_id=2434](https://www.wipo.int/about-ip/en/artificial_intelligence/strategy-search.jsp?territory_id=&policy_id=2434) accessed 6 March 2025.

<sup>26</sup> *IceTV Pty Ltd v Nine Network Australia Pty Ltd* [2009] HCA 14.

<sup>27</sup> *Amel Chamandy / Galerie NuEdge Fine Arts v Adam Basanta* 500-17-104564-185 (Quebec Superior Court).

<sup>28</sup> *Shenzhen Tencent Computer System Co Ltd v Shanghai Yingmou Technology Co Ltd* (2019) Yue 0305 Min Chu No 14010 Civil Judgment (China).

<sup>29</sup> The National Law Review, 'Latest Decision by the Supreme People's Court of China Confirms Validity of "Little i Robot" Patent' <https://www.natlawreview.com/article/latest-decision-supreme-people-s-court-china-confirms-validity-little-i-robot-patent> accessed 6 March 2025.



Above discussion leads us to another field that can be covered under the broad head of AI that is organic computing. It was coined at a workshop organised in November 2002, goal of which was to predict some important technical developments in computer science in the next 5 to 10 years and to derive the corresponding challenges for industry and academia<sup>30</sup>. In the simplest of sense, organic computing is computing that behaves and interacts with humans in an organic manner<sup>31</sup>. An organic computer is given a goal and a budget – it then finds the best way to accomplish the goal with the means at hand, thus organic computer is much like a human in many ways<sup>32</sup>:

- i. It is introspective or self-aware;
- ii. It is adaptive;
- iii. It is self-healing in that it constantly monitors its resources for faults and takes corrective action as needed;
- iv. It is goal oriented;
- v. It is approximate in that it uses the least amount of precision to accomplish a given task.

Just like an organic computer, definition of organic computing has also evolved. Organic computing now does not just mean that a computer behaves organically, it is also based on the insight that we are increasingly surrounded by large collections of autonomous systems, which are equipped with sensors and actuators, aware of their environment, communicate freely, and organise themselves in order to perform the actions and services that seem to be required<sup>33</sup>. Organic computing, among all the trends that have been discussed in this study, is the most underdeveloped and it will be exciting to see as to what will happen when organic computer will acquire an

---

<sup>30</sup> Sven Tomforde, Bernhard Sick and Christian Müller-Schloer, 'Organic Computing in the Spotlight' (arXiv, 27 January 2017) <https://arxiv.org/abs/1701.08125> accessed 6 March 2025.

<sup>31</sup> Poondru Prithvinath Reddy, 'Organic Computing: Future of Self-Organizing Technologies' (Medium, 14 February 2020) <https://medium.com/@ppreddy576/organic-computing-future-of-self-organizing-technologies-dfe02fd5dc79> accessed 6 March 2025.

<sup>32</sup> Anant Agarwal and Bill Harrod, *Organic Computing* (MIT CSAIL, August 2006) <https://groups.csail.mit.edu/cag/raw/documents/Agarwal-Harrod-organic-2006.pdf> accessed 6 March 2025.

<sup>33</sup> Sven Tomforde, Bernhard Sick and Christian Müller-Schloer, 'Organic Computing in the Spotlight' (arXiv, 27 January 2017) <https://arxiv.org/abs/1701.08125> accessed 6 March 2025.

‘intellect’ of their own and will be able to produce their own ‘intellectual property’. This will surely lead to dramatic changes in the way we have conceptualised IPR and also lead to shifts in traditional thinking that only a ‘human’ can own intellectual property.

## **POSSIBLE SOLUTIONS AND POLICY RECOMMENDATIONS**

One of the main difficulties in conferring intellectual property rights (IPR) to works created by human-made AI is the lack of clear-cut legal framework. Current laws, including the Patents Act, 1970, and the Copyright Act, 1957, are human-authorship or inventorship-based, which complicates the conferment of rights to AI-generated innovations. Establishing a clear legal framework will be one of the first steps in resolving the issue. To treat this issue, India must bring in amendments that set definitions of AI-created works and implement a hybrid model of ownership where rights are granted on the basis of human input. This might involve declaring the developer, the user, or the controllers of the AI as the rightful owners so that accountability and legal enforceability are maintained.

Another important issue is the possibility of monopolization of AI-generated innovation, wherein vast conglomerates with huge resources procure and impose sole rights on AI-generated patents and copyrights, limiting access to small innovators. To counter this, India can initiate compulsory licensing provisions for patents generated through AI, making necessary technological innovations universally available. Another way is encouraging open-source AI projects to promote cross-pollination of ideas, innovation, and collaboration between small businesses, lone researchers, and startups. The Competition Commission of India (CCI) has already worked against monopolies in the digital economy, and similar regulatory orders can be replicated to avert undue corporate monopoly over intellectual property generated through AI.

Finally, providing human oversight and ethical responsibility for AI-generated works is necessary to keep trust and accountability in innovation. As AI works independently, there is a fear of bias, mistake, and legal controversy regarding ownership and infringement.

---

## **CONCLUSION**

The increasing capacity of Artificial Intelligence (AI) to create novel works has ignited intense debate on intellectual property rights (IPR) and authorship. Classical IP paradigms, based on human inventorship and authorship, have difficulty dealing with AI-created content, thus giving rise to legal ambiguities. In India, neither the Patents Act, 1970, nor the Copyright Act, 1957, specifically recognize AI as a creator or author and hence as an inventor or author, rendering it challenging to grant rights in AI-generated work. Although a few jurisdictions have tested granting rights to AI creators or users, India has yet to take a position.

In order to overcome these intricacies, India needs to take into consideration policy reforms that usher in an organized framework for AI-generate IPR. Adopting a hybrid model of ownership, encouraging open-access AI innovation, and maintaining human control in AI-generated works can aid in finding an equilibrium between technological advancement and equitable IP allocation. As AI technology develops further, Indian policymakers need to embrace proactive legal steps that safeguard both AI-based innovations and human ingenuity, with a level playing field promoting equitable and inclusive innovation.

