



**DREWACADEMY**

DATA PROTECTION & CYBERSECURITY SERVICES

# IP PROTECTION OF AI SYSTEMS AND THEIR OUTPUTS – CAN AI WRITE THE NEXT BESTSELLING NOVEL?

## LEGAL GUIDES 2023

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# IP PROTECTION OF AI SYSTEMS AND THEIR OUTPUTS – CAN AI WRITE THE NEXT BESTSELLING NOVEL?

## Protecting Artificial Intelligence

The intellectual property (“IP”) regime is a critical enabler of artificial intelligence (“AI”) innovation as it gives innovators the means to protect their works and competitive advantage. Often, it is a combination of different IP rights which are needed to meaningfully protect AI inventions. Thus, it is important to understand how these different IP rights may apply to protect AI inventions.

### **Patent**

The patent regime grants rights for an invention, which can be a product or process, for a period of up to 20 years from the date of filing.<sup>1</sup> This allows the rights holder to exclude others from carrying out infringing acts relating to the patented invention such as making or selling the patented product or using the patented process.<sup>2</sup> In order to meet the requirements of patentability, the invention must be novel, involve an inventive step and be capable of industrial application.<sup>3</sup>

As part of Singapore’s National AI Strategy, launched in November 2019, the Intellectual Property Office of Singapore (“IPOS”) introduced the Accelerated Initiative for Artificial Intelligence (AI<sup>2</sup>) which accelerated the application-to-grant-process for AI patent applications from about 2-4 years to within 6 months. This initiative has since been replaced with the SG IP FAST Programme (which has been extended to 30 April 2024) to support the acceleration of patent applications in all technological fields, and the similar acceleration of related trade mark and registered design applications. Similarly, AI patent applications may be granted within 6 months in the case of straightforward applications and otherwise within 9 months.<sup>4</sup>

It should be noted that AI typically uses computational models and algorithms which, by themselves, are mathematical methods that are not considered to be inventions and are unpatentable.<sup>5</sup> However, where an AI patent application relates to the application of AI to solve a specific problem in a manner that goes beyond the underlying mathematical method, the application could be regarded as an invention.<sup>6</sup>

### **Copyright**

The AI innovator may obtain protection for source codes and algorithms as literary works under the Copyright Act 2021. Copyright protects the expression of ideas and allows copyright owners to control specific uses of their works – generally for the period of the life of the author and 70 years after the death of the author in the case of literary works<sup>7</sup>. Importantly, for a work to be protected by copyright in Singapore, it must be original<sup>8</sup> and the copyright will subsist upon creation of the work with no requirement of registration of the work.

Generally, the courts have defined literary works as works that are expressed in writing and containing information that can be read by somebody as opposed to being appreciated simply with the eye.<sup>9</sup> Additionally, the Copyright Act 2021 defines literary work as including compilations and computer programs.<sup>10</sup>

<sup>1</sup> Section 36(1) of the Patents Act 1994.

<sup>2</sup> Section 66(1) of the Patents Act 1994.

<sup>3</sup> Section 13(1) of the Patents Act 1994.

<sup>4</sup> IPOS Acceleration Programmes, <https://www.ipos.gov.sg/about-ip/patents/how-to-register/acceleration-programmes>

<sup>5</sup> Para 8.22, IPOS Examination Guidelines for Patent Applications, <https://www.ipos.gov.sg/docs/default-source/resources-library/patents/guidelines-and-useful-information/examination-guidelines-for-patent-applications.pdf>

<sup>6</sup> Page 6, IPOS IP and Artificial Intelligence Information Note, <https://www.ipos.gov.sg/docs/default-source/default-document-library/ip-and-ai-info-note.pdf>.

<sup>7</sup> Section 114(1) of the Copyright Act 2021.

<sup>8</sup> Sections 109 and 110 of the Copyright Act 2021.

<sup>9</sup> *Real Electronics Industries Singapore (Pte) Ltd v Nimrod Engineering Pte Ltd* 1995 3 SLR(R) 909.

<sup>10</sup> Section 13 of the Copyright Act 2021.

## **Trade Secrets and Confidential Information**

AI innovations may also be protected under the law of confidence. Generally, confidential information can refer to non-trivial, technical, commercial or personal information which is not known to the public while trade secrets usually describe such information with commercial value.<sup>11</sup> Persons with access to confidential information are generally required under the law to keep it confidential and not disclose it or they may be liable in an action for breach of confidence.

Information will possess the quality of confidence if it remains relatively secret or inaccessible to the public as compared to information already in the public domain.<sup>12</sup> Thus, some means AI innovators and organisations may consider using to secure their AI inventions include implementing non-disclosure agreements, encrypting their materials and classifying information to limit access to only select groups of people or on a need-to-know basis.

However, AI innovators should be aware that they cannot protect their AI inventions under both patent and the law of confidence as the former requires disclosure to the public domain which destroys the quality of confidence. Therefore, AI innovators should be careful to consider which regime would be more appropriate to protect their work. Some considerations include whether the invention constitutes patentable subject matter and if the invention is likely to be made public soon or is easily derived by others through reverse-engineering.

## **Open Source Software and AI<sup>13</sup>**

As AI algorithms and software are still developing, the industry and governments have encouraged development through open sourcing of AI codes and algorithms. This means that source codes and software have been made legally available for users to use, modify and/or share with others subject to the terms of the licence imposed by the owners of the code or software.

For instance, Google developed Tensorflow, an open source software (“OSS”) library with a particular focus on training and development of machine learning models. This was released under a permissive OSS licence which allows users to freely commercially use, modify, distribute and sublicense its source code without requiring the users to contribute their own derivative works back to the open source community. In contrast, there are also OSS licences which require developers to contribute their modified works back to the open source community under the same terms of use.

However, IP rights still continue to subsist in OSS. Licences often require the preservation of copyright notices, and the OSS or the underlying inventions around the OSS could be the subject of patent rights. Users should therefore be mindful of the terms of the licence so as not to inadvertently infringe on IP rights or use the OSS in a manner that breaches the terms of the licence.

## ***Protecting Creations by Artificial Intelligence***

On the other hand, in analysing whether creations by AI are protected under the current IP regimes, a distinction should be drawn between works created by AI independently and works created by a human with the assistance of AI. This distinction is an important one since, as the law stands, it will draw a line between works created by AI and works where AI is merely used as a tool in creation.

Preliminarily, under both copyright and patent regimes, while legal persons can own copyright and patents, only works and inventions created by natural persons will be offered protection. Under section 19 of the Patents Act 1994 read with section 2(1), any person may make an application for a patent and a patent may be granted primarily to the inventor (being the actual deviser of the invention). As for copyright, the Singapore Court of Appeal in *Asia Pacific Publishing Pte Ltd v Pioneers & Leaders*

<sup>11</sup> Page 9, IPOS IP and Artificial Intelligence Information Note.

<sup>12</sup> *Invenpro (M) Sdn Bhd v JCS Automation Pte Ltd* [2014] 2 SLR 1045 at [130(a)].

<sup>13</sup> See generally pages 10 to 11, IPOS IP and Artificial Intelligence Information Note.

(Publishers) Pte Ltd<sup>14</sup> (“Asia Pacific Publishing”) held that copyright cannot subsist without a human author.

### **Copyright**

For works that fall under the copyright regime, the Court of Appeal in *Global Yellow Pages v Promedia Directories Pte Ltd*<sup>15</sup> affirmed the human author requirement in *Asia Pacific Publishing* and held that for copyright to subsist, the authorial creation must be causally connected with the “engagement of the human intellect” – the application of intellectual effort, creativity or the exercise of mental labour, skill or judgment. Therefore, if AI is treated as a mere tool used by a human author to create the work such that there was an “engagement of the human intellect”, the AI generated work may be protected under copyright. If, however, there was a “high degree of automation”, there will be no original work produced and no copyright subsistence since there is no identifiable human author.<sup>16</sup>

By way of contrast, in the United Kingdom, the Copyright, Design and Patents Act 1988 (“CDPA”) expressly provides that computer-generated works without a human author enjoy copyright protection for a term of 50 years from the end of the calendar year in which the work was made.<sup>17</sup> Under section 9(3) of the CDPA, the author of such a work is taken to be the person by whom the arrangements necessary for the creation of the work are undertaken. Thus, AI generated works are protected by copyright even where no human author can be identified.

Interestingly, in China, mixed decisions have arisen in relation to this issue on AI and the subsistence of copyright. In 2020, the Shenzhen Nanshan District People’s Court held that articles automatically generated by an AI news writing software qualified for copyright protection<sup>18</sup>. However, the Beijing Internet Court has arrived at an opposite decision in a similar case, holding that copyrightable works must be created by natural persons even if there is originality in the AI-generated output.<sup>19</sup>

### **Patent**

While no cases have been considered by the Singapore courts on this issue, across various jurisdictions, including the UK, a series of disputes with IP offices have arisen as a result of the filing of a patent by US scientist, Dr Stephen Thaler. Thaler had developed an AI system, known as “DABUUS”, and claimed that DABUS is the inventor of a number of inventions. Thaler later attempted to file several patents for these inventions across jurisdictions with DABUS listed as the inventor and he argued that patent rights granted to DABUS should be assigned to him. Thaler has not succeeded in any jurisdiction except for South Africa, and even so, South Africa’s acceptance of the patent application has been subject to much debate.<sup>20</sup>

In the UK, the High Court and Court of Appeal have upheld the UK’s Intellectual Property Office’s decision to reject Thaler’s patent application. The High Court held that the person making the patent application must be a legal personality and a patent can only be granted to such a person. As the inventor is by default the person entitled to the patent rights, it therefore followed that the inventor had to be a person with legal personality.<sup>21</sup> Thaler’s appeal was heard in the UK Supreme Court on 2 March 2023 and we are presently awaiting judgment. The outcome of this case is important as it will give guidance on the rights in works generated using AI – and if a human inventor is necessary, who is the human inventor, since there are a large number of individuals involved from the training of the model to

<sup>14</sup> [2011] 4 SLR 381.

<sup>15</sup> [2017] 2 SLR 185.

<sup>16</sup> See *Asia Pacific Publishing* at [81].

<sup>17</sup> Section 178 read with section 12(7) of the CDPA.

<sup>18</sup> <https://www.chinadaily.com.cn/a/202001/09/WS5e16621fa310cf3e3558351f.html>

<sup>19</sup> [https://english.bjinternetcourt.gov.cn/2019-05/30/c\\_170.htm](https://english.bjinternetcourt.gov.cn/2019-05/30/c_170.htm) and

<https://www.sciencedirect.com/science/article/abs/pii/S0267364921000546#:~:text=In%20this%20case%2C%20the%20Beijing,software%20although%20it%20possessed%20originality>.

<sup>20</sup> <https://qz.com/africa/2044477/south-africa-grants-patent-to-an-ai-system-known-as-dabus>

<sup>21</sup> *Thaler v Comptroller General of Patents, Designs And Trade Marks* [2020] Bus LR 2146. See also *Thaler v Comptroller General of Patents, Designs And Trade Marks* [2022] Bus LR 375.

the selection of the model to the person who came up with the prompt for the AI system to generate the works.

Since at present neither patent nor copyright legislation protect independently generated AI works and the question of protection of AI assisted works is heavily dependent on the facts of individual cases, the best alternative for AI users is to settle the issues of ownership, assignment and licensing under contract.

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## **DREW DATA PROTECTION & CYBERSECURITY ACADEMY**

Drew Data Protection & Cybersecurity Academy (Drew Academy) was established in 2020 by Drew & Napier to help our clients build their capabilities and develop and implement organisational strategies, structures, policies and processes to meet their legal, regulatory and compliance obligations. Drew Academy offers a range of courses in areas such as data protection, cybersecurity, data governance and in-house commercial practice. A particular focus for us is the delivery of workplace learning solutions and development of customised training courses. We also offer outsourced DPO services and data protection consulting services through our experienced team of practitioners.

Drew Academy is helmed by Lim Chong Kin and David N. Alfred. Our course leaders are experienced in various aspects of data and cyber governance, data protection, cybersecurity engineering and in-house commercial practice.

## **ARTIFICIAL INTELLIGENCE AND DIGITAL TRUST**

Drew & Napier's Artificial Intelligence (AI) and Digital Trust practice brings together its expertise across several technology-related domains and in fields as diverse as data protection, cybersecurity, healthcare, Fintech, intellectual property and competition law (to name a few) to advise clients on the full range of legal issues relating to AI and Digital Trust. In addition to advising on commercial, regulatory and international / cross-border issues, our advice extends into areas such as governance and ethics as we seek to enable our clients to navigate areas where laws and legal principles are still emerging.

Working together with the Drew Academy, we provide solutions that reflect our deep understanding of underlying technologies, the risks and uncertainties involved and practical business considerations. Internationally, there is a growing consensus on AI governance.



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