ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ И АВТОРСТВО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ

ARTIFICIAL INTELLIGENCE AND AUTHORSHIP OF INTELLECTUAL PROPERTY

Питер Б. МЭГГС
Иллинойский университет, г. Урбан-Шампейн, США,
p-maggs@illinois.edu,
ORCID: 0000-0001-6621-6785

Peter Blaunt MAGGS
University of Illinois, Champaign, Illinois USA,
p-maggs@illinois.edu,
ORCID: 0000-0001-6621-6785

Информация об авторе
Питер Блаунт Мэггс — профессор-исследователь в области права, Университет Иллинойса, ассоциированный член Кафедры ЮНЕСКО НИУ ВШЭ, Москва, доктор права

Information about the author
P.B. Maggs — Research Professor of Law, University of Illinois, Associate Fellow of the UNESCO Chair at the HSE University, Moscow

Аннотация. Появление чрезвычайно мощного чат-бота с искусственным интеллектом ChatGPT в конце 2022 г. сделало актуальным поиск решений вопросов авторства и защищенности произведений, созданных с помощью искусственного интеллекта. Эти вопросы особенно остро стоят в областях авторского права и патентного права, где творческая деятельность человека традиционно была условием защиты. В настоящей статье обсуждаются эти вопросы в свете экспериментов с ChatGPT.

Abstract. The appearance of the extremely powerful artificial intelligence chatbot "ChatGPT" in late 2022 has made urgent the finding of solutions to the questions of the authorship and protectability of works created with the aid of artificial intelligence. These questions are particularly acute in the areas of copyright and patent law where human creativity traditionally has been a requirement for protection. The present article discusses these issues in the light of experiments with ChatGPT.

In writing this Article I used Version 3.5 of ChatGPT (short for Chat Generative Pre-trained Transformer), a chatbot made available to the public in November 2022 by OpenAI in November 2022. Version 4.0 of ChatGPT became available in March 2022. It is much more powerful. For instance, Version 3.5 made an mediocre score on the examination used by many states in the United States for admission to the practice of law. In contrast Version 4.0 made an excellent showing on the same exam [1].

I asked ChatGPT: "What are the problems of authorship by AI in copyright and patent law?" It gave me the following answer:

"The increasing use of artificial intelligence (AI) in creative works has raised questions about the authorship and ownership of such works. While AI can generate unique and original content, it is currently incapable of legal personhood, raising concerns about who owns the rights to the work.

In copyright law, the traditional notion of authorship is based on human creativity, skill, and effort. Copyright protects original works of authorship fixed in any tangible medium of expression, and the author has the exclusive right to reproduce, distribute, display, and perform their work. However, when AI is used to create a work, it is difficult to determine who the author is, as the contribution of the programmer and the AI system can be significant. It is also unclear whether the traditional standards of originality and creativity apply to AI-generated works.

In patent law, inventorship is similarly based on human contribution, and a person who conceives of an invention is entitled to a patent. However, if AI systems are involved in the process of inventing, it is unclear whether they can be listed as inventors or co-inventors, as they are not legal persons.

Another issue is the potential for AI-generated works to infringe on the copyrights or patents of existing works. If an AI system is trained on existing copyrighted or patented material, it may generate works that are too similar to those protected by intellectual property rights. This raises questions about whether the use of AI in creative works could lead to an increase in copyright and patent infringement.

Overall, the problems of authorship by AI in copyright and patent law are complex and require careful consideration by legal scholars and policymakers".

ChatGPT's training data base did not include material after 2021. I would like to give an updated and more detailed answer to this question, specifically with respect to United States intellectual property law.

The starting point is a leading Supreme Court case, decided in 1884 [2]. This case concerned whether or not a portrait of the famous author Oscar Wilde could be protected by copyright, given that a camera had played a key role in the making of the photograph.

Pic. 1. Portrait of Oscar Wilde

The Supreme Court ruled in favor of copyright protection, on the finding that the photograph was:

"a useful, new, harmonious, characteristic, and graceful picture, and that plaintiff made the same ... entirely from his own original mental conception, to

which he gave visible form by posing the said Oscar Wilde in front of the camera, selecting and arranging the costume, draperies, and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, suggesting and evoking the desired expression, and from such disposition, arrangement, or representation, made entirely by plaintiff, he produced the picture in suit".

In contrast to this case, a federal court ruled that no copyright was available, because of lack of human creativity when a monkey took an excellent selfie [3]:

Pic. 2. Selfie made by a monkey

Unlike most countries, and in possible violation of the Berne Convention, the United States requires that works be registered to obtain full copyright protection. In 2022, the Copyright Office denied registration to a picture created entirely by artificial intelligence [4].

On March 16, 2023, the Copyright Office, drawing on the cases described above, issued detailed guidance on works created with the aid of artificial intelligence [5]. It stated:

"Consistent with the Office's policies described above, applicants have a duty to disclose the inclusion of AI-generated content in a work submitted for registration and to provide a brief explanation of the human author's contributions to the work".

Pic. 3. Picture generated by AI

In addition to the pictorial works discussed above, copyright also applies to written works. However, a federal court has held that a work described by the parties as a collection of sayings "authored by non-human spiritual beings described in terms such as the Divine Counselor, the Chief of the Corps of Superuniverse Personalities, and the Chief of the Archangels of Nebadon" [6] could be protected by copyright for its selection and ordering of the "sayings" but that the individual "sayings" could not be copyright because they were not stated to be by a human author.

Consider the following (with my apologies to the Heinrich Heine and Mikhail Lermontov). I asked ChatGPT (in Russian) to write a short poem about a spruce in the north and a palm tree in the south.

Напишите короткую поэму о сосне на севере и пальме на юге!

ChatGPT:
*"На севере сосна, ветром колышется,
Зимой покрыта снегом, белым и пушистым.
А на юге пальма, солнцем обласкана,
Листьями мягкими, теплом насыщена".*

Google Translate:
*"In the north, a pine sways in the wind,
In winter it is covered with snow, white and fluffy.
And in the south a palm tree, caressed by the sun,
The leaves are soft, full of warmth".*

My translation:
*"The pine in the north with the wind may lean,
Covered in winter by snow, white and clean;
The palm in the south, touched by sun's rays
With its fronds all soft and ablaze".*

It is well established that not only great poems, but also bad poems are protected by copyright. Thus the poem produced by ChatGTB is not copyrightable because not created by a human, even though it would be copyrightable if written by a human.

Likewise the English translation made Google Translate is not copyrightable because not made by a human. However, your humble servant's bad translation of the uncopyrightable poem is protected by copyright, because even a bad human translation is protected by copyright. This suggests an interesting strategy. In 1997 someone published a purported translation of the 13th century diary of a European traveler, who purportedly visited China before Marco Polo. However, he stated that he withheld the original manuscript [7]. Assuming for the purpose of discussion that the diary is genuine, it would, after 700 years, be in the public domain. However, by publishing a translation and withholding the original, the author of the translation obtained copyright protection for the only available version of the diary.

ChatGPT can write computer code. I asked ChatGPT: "Write a program in the c language that prints "Hello World"".

ChatGPT:
Here's a simple C program that prints "Hello World" to the console:
```
#include <stdio.h>
int main() {
 printf("Hello World\n");
 return 0;
}
```
Complex questions will arise with respect to the extent of disclosure of artificial intelligence elements required to register copyright to computer code.

Patent law raises questions similar to copyright law. Consider the response of ChatGPT when asked (in Russian) to invent a bicycle ("Изобрети велосипед"). It provides some very good ideas for things that people might try to invent, but is very far from anything that could be submitted as a patent application. Here's ChatGPT´s reply in Russian with my translation added.

ChatGPT:
Как искусственный интеллект я не являюсь экспертом в области проектирования велосипедов, но я могу предложить несколько идей, которые могут быть интересными.
[As an artificial intelligence, I am not an expert in the area of designing bicycles, but I can suggest some ideas that might be interesting.]
1. Светодиодные колеса: велосипед с пластиковыми колесами, в которых встроены светодиоды разных цветов. Это может быть полезно для безопасности вечером и при низкой видимости, а также для красивого эффекта.
[1. LED wheels: a bicycle with plastic wheels with LEDs of various colors mounted in them. This could be useful for safety at night or low visibility and also for a beautiful effect.]
2. Велосипед на солнечных батареях: велосипед, который может заряжаться от солнечных батарей, расположенных на раме. Это может быть особенно полезно для дальних поездок, когда нет возможности зарядить аккумулятор велосипеда.
[2. A bicycle with solar panels: a bicycle that could be charged with by solar panels placed on the frame. This could be particularly useful for long trips when there is no way to charge the battery of the bicycle.]
3. Электрический велосипед с продвинутой системой навигации: велосипед, оснащенный современной системой GPS-навигации. Это может быть полезно для тех, кто любит кататься по незнакомым местам, и может предупреждать они о грядущей опасности.
[3. An electric bicycle with an advanced navigation system: a bicycle provided with a modern GPS-navigation system. This could be useful for those that love to ride in unfamiliar places and could warn they of threatening danger.]
4. Велосипед с универсальным рулем: велосипед с рулем, который может переставляться на любую сторону. Это может быть полезно для тех, кто имеет проблемы с зрением или управлением, когда нужно проехать на очень узком пространстве.
[4. A bicycle with a universal handlebar: a velocipede with a handlebar that could be mounted in any direction. This could be useful for those who have problems with vision or steering when it was necessary to go in a very narrow space.]
5. Складной велосипед-трансформер: велосипед, который может легко складываться и превращаться в другие формы транспорта — например, скейтборд или скутер. Это может быть особенно полезно для городской езды, когда нужно быстро перемещаться в разных режимах.
[5. A folding transformable bicycle: a bicycle that easily could be folded and transformed into other types of transport — for instance into a skateboard or scooter. This could be particularly useful for travel in town, when it is necessary to switch quickly to other setups.]

In the paragraph 3 of its answer ChatGPT, to my surprise, made a very basic mistake in Russian grammar. It said "предупреждать они", which I have translated as "warn they" using the analogous mistake in English grammar. Perhaps this mistake gives some clue as to how ChatGPT operates. Undoubtedly, this and similar problems will be fixed in improved versions of the chatbot.

The situation is very different with respect to trademark law. In the United States trademarks must

meet various specific requirements, such as identifying goods of a particular maker, not being confusingly close to existing trademarks, and as not being generic names. However, there is no requirement of human creativity. Consider the following reply by ChatGPT when I asked "Suggest a trademark for a new electric car company."

ChatGPT:
Elevatelectric
This mark not only meets the legal requirements. It also has a positive tone that might be useful in selling electric vehicles.

Trade secrets are protected if they have economic value and are not publicly available. Since there is no requirement of creativity, information created by artificial intelligence can be fully protected if it meets the general trade secrecy requirements.

Now, I return to a warning that ChatGTB gave to me. As I mentioned above, it said:

"Another issue is the potential for AI-generated works to infringe on the copyrights or patents of existing works. If an AI system is trained on existing copyrighted or patented material, it may generate works that are too similar to those protected by intellectual property rights. This raises questions about whether the use of AI in creative works could lead to an increase in copyright and patent infringement".

Getty Images, a leading supplier of stock photographs has filed suit against an artificial intelligence company, alleging [8]:

This case arises from Stability AI's brazen infringement of Getty Images' intellectual property on a staggering scale. Upon information and belief, Stability AI has copied more than 12 million photographs from Getty Images' collection, along with the associated captions and metadata, without permission from or compensation to Getty Images, as part of its efforts to build a competing business. As part of its unlawful scheme, Stability AI has removed or altered Getty Images' copyright management information, provided false copyright management information, and infringed Getty Images' famous trademarks.

This case alleges copyright infringement at the stage of training of an artificial intelligence system. There may (or may not) be a defense of "transformative fair use," since the defendant may claim that it is not duplicating Getty's product but rather is merely using it as data to create a completely different and highly useful product.

However, if the resulting output to users includes images identical or highly similar to the photographs in Getty Images' Collection, Getty would have a straightforward claim of copyright infringement.

To conclude, I fully agree with ChatGPT's statement that:

"Overall, the problems of authorship by AI in copyright and patent law are complex and require careful consideration by legal scholars and policymakers".

REFERENCES

1. URL: https://en.wikipedia.org/wiki/ChatGPT; "Introducing ChatGPT," https://openai.com/blog/chatgpt; https://openai.com/research/gpt-4 (discussing scores achieved on standard examinations).
2. Burrow-Giles Lithographic Company v. Sarony, 111 U.S. 53 (1884). https://supreme.justia.com/cases/federal/us/111/53/
3. Naruto v. Slater, 888 F.3d 418 (9th Cir. 2018). https://cdn.ca9.uscourts.gov/datastore/opinions/2018/04/23/16-15469.pdf
4. URL: https://www.copyright.gov/rulings-filings/review-board/docs/a-recent-entrance-to-paradise.pdf
5. https://www.federalregister.gov/documents/2023/03/16/2023-05321/copyright-registration-guidance-works-containing-material-generated-by-artificial-intelligence
6. *Urantia Found. v. Kristen Maaherra*, 114 F.3d 955 (9th Cir. 1997). https://caselaw.findlaw.com/us-9th-circuit/1433972.html
7. Doreen Carvajal, "Marco Polo: Is a Rivalry Just Fiction?". https://www.nytimes.com/1997/12/09/world/marco-polo-is-a-rivalry-just-fiction.html; "Fact or Faked: The Travels of Jacob D'Anacona" — Guest Blog by Rachel Landau, https://beyondvictoriana.com/2011/06/05/fact-or-faked-the-travels-of-jacob-danacona-guest-blog-by-rachel-landau/
8. URL: https://cdn.vox-cdn.com/uploads/chorus_asset/file/24412807/getty_images_vs_stability_AI_delaware.pdf