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Copyright Protection towards Generative AI Artworks: *The “Clash” between US v. China and the Implications for the European Union*

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Summary

Despite the huge benefits bringing to our lives, there have been doubts and controversies during the operation of artificial intelligence (“AI”) technology AI in society, especially from the legal perspective. While AI is evolving at an unprecedented pace like never before, the legal frameworks of countries around the world still struggle to find the appropriate answer to uniformly deal with AI-related issues. This master thesis would like to discuss one of the legal perspectives that AI technology has drawn the attention recently - its relationship towards copyright law. As a novelty way on how AI works, it will bring new challenges to the assessment of copyright if the European Union (“EU”) legislators still decide to go on the traditional route, especially for the originality assessment of the input prompts when using generative AI (“GenAI”) tools.

The thesis will start in a classic way, illustrating the copyright protection mechanism in the EU; what conditions for a work to earn such protections. The next step is the assessment for AI-generated works. The main focus of this thesis would dive into the ability of GenAI to create images, explaining how this technology works when introducing GenAI in Part 2.¹

This will later lead to the main point of this thesis, to answer whether AI-generated images would be eligible to earn the protection of EU copyright law. This thesis will assess the input prompts into the GenAI tools, in the form of text, on whether they would constitute adequate creativity, or to be exact, pass the test of originality. If the answer for the originality of the prompts is affirmative, would AI-generated works be eligible to be in the protection of copyright law, and how the protection would be elaborated in this regime. On the other hand, if there is no connection between the works of AI and conditions of authorship or the test of originality, would there be any mechanism to ensure copyright protection for such works, or would they fall into the public domain.

Before reaching the conclusion, the thesis would first assess the EU law, to see how it defines the terms AI and GenAI. This is also a crucial aspect since it would be one of the main foundations to determine the relationship between artworks generated through AI-based tools and EU copyright law. The thesis would also take a broader look into the legislation and the caselaw of (i) the Member States of the EU (“MS”), (ii) the United States of America (“US”) and (iii) the People’s Republic of China (“China”) about this matter. This thesis chose these legal systems besides the EU for numerous reasons. Some can be listed as: (i) they are the global leaders in technology, especially in AI and its related sectors; (ii) those countries are having extensive legal frameworks towards intellectual property rights (“IPR”) protection. Combining

¹ See Part 2, *AI and GenAI*.

those factors, (iii) all of the countries mentioned in this thesis are all eager to create a proper set of regulations applied for AI, especially on intellectual property (“IP”) law.

There are interesting points when assessing the countries in the research questions, with remarkable differences. For the EU, there has not been any official legal document, legal guidance or caselaw to clearly answer the issue of AI-generated works protection under EU copyright law. On the other hand, in the US and China, there have been caselaw from the courts regarding this matter. In the following parts of this thesis, such cases will be demonstrated and analysed. As of now, there is not a uniform answer regarding this question. The US has rejected the possibility of such protection, first recognised in *Zarya of the Dawn*.² However, China has recently published the first judgment in the world going oppositely in arguments, offering copyright protection for images created from GenAI tools.³

Although EU legislators have not settled this relationship, it is suggested that EU copyright law would follow the legal choice in the US. However, this would not be the final, or proper answer to this matter. Suppose all of the works generated in AI tools, created through the text prompts put in by the human users, are refused to be protected under the copyright law regime. In that case, this may lead to the risk of demoting the innovation of AI technology, which would go against the intention of EU law drafters when establishing and enacting legal regulations in the field of AI. Ultimately, I like would suggest the future potential of copyright protection to be accepted, specifically for AI-generated images in a proportionate way, with the users of such tools become the authors (or right owners) of the images. When the advancement of AI technology has developed in an unprecedented way and caused non-traditional impact, it is in need of a non-traditional approach to resolve legal issues linked to AI, including copyright law. This line of argument would not only promote the innovation of GenAI and AI in general, but also to be in line with the intention of EU law drafters in the law for AI.

² See Part 4.1, *The United States*.

³ See Part 4.2, *China*.

Preface

I want Europe to strive for more by grasping the opportunities from the digital age within safe and ethical boundaries [...] AI are transforming the world at an unprecedented speed. They have changed how we communicate, live and work. They have changed our societies and our economies [...] I will put forward legislation for a coordinated European approach on the human and ethical implications of AI.⁴

The statement of Ursula von der Leyen, the President of the European Commission has illustrated the undisputable importance of AI within EU nowadays. In that context, the master thesis entitled “*Copyright Protection towards Generative AI Artworks: The “Clash” between US v. China and the Implications for the European Union*” has demonstrated two big interests during my time in Lund, AI and IP law. With more growing interest in the topic of AI, I hope this thesis will be a useful source of information regarding this matter.

As the time this paper will be published, this also means my time at Lund comes to a “temporary” end. For me, this is the “once in a lifetime experience”, not only improving my legal knowledge, but also changing me, as an individual in the most positive way. I would first send my gratitude to *Doctor Aurelija Lukoseviciene*, my supervisor for this thesis, to give me helpful and interesting conversations to accomplish this big writing task. I would like to express my sincere thanks to all of the staff in the Faculty of Law from their assistance and lectures that broaden my horizon of knowledge in the legal field. Among all of the lecturers, I would like to send my gratefulness to *Professor Xavier Groussot*. I cannot imagine what I would have gone through during two-year master program without your kindness and amazing “sessions” that you had offered for the last two years. Besides, as the holder of the Lund University Global Scholarship, I would like to send my thankfulness to the university for giving me this precious opportunity.

I would also like to send my best regards to all of my classmates for sharing two meaningful years in Sweden. It is my pleasure to become your classmate/colleague with people all over the world, from whom I have learned many interesting things, not only in law, but other perspectives in life.

⁴ U. von der Leyen, *A Union that strives for more – My agenda for Europe*, Political Guidelines for the European Commission President, https://commission.europa.eu/document/download/063d44e9-04ed-4033-acf9-639ecb187e87_en?filename=political-guidelines-next-commission_en.pdf, retrieved on 26 February 2024.

During my study, I also got a lot of meaningful support back in my home country, Việt Nam. That is why I would like to save this space to thank, first, my dear friends, especially the Counter-Strike gang that went through entertaining nights with me. I would also send my warmest regards to *Thảo Trần* for going along with me through this challenging journey. Finally, without the endless love and support from my family, I cannot become who I am today, so I would like to send my warmest love to *Mr. Tú Thanh Nguyễn*, my uncles and my grandparents. For my parents, “Con cảm ơn và yêu ba Ky – mẹ Huyền nhiều lắm”. And for now:

“*Hasta la vista...*” – Arnold Schwarzenegger (Terminator).

Lund, 20 May 2024

Lê Tấn Phước Vinh.

Abbreviations

AI	artificial intelligence
AI Act	Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts.
AI White Paper	European Union White Paper on Artificial Intelligence – A European approach to excellence and trust on 19 February 2020.
Berne Convention	Berne Convention for the Protection of Literary and Artistic Works (Paris Act) of 24 July 1971, as amended on 28 September 1979
BIC	Beijing Internet Court
CAC	the Cyberspace Administration of China
CFR	Charter of Fundamental Rights of the European Union
China	the People’s Republic of China
CJEU	the Court of Justice of the European Union
EU	the European Union
France IP Code	the Draft French Intellectual Property Code, 16 October 2023
GenAI	generative artificial intelligence / generative AI
IP / IPRs	intellectual property / intellectual property rights
IPR	intellectual property rights
MS	the Member State(s) of the European Union
NSCAI	the United States Security Commission on Artificial Intelligence
TRIPS Agreement	Trade-Related Aspects of Intellectual Property Rights Agreement
US	the United States of America
USCO	the United States Copyright Office
WCT	World Intellectual Property Organisation Copyright Treaty adopted in Geneva on December 20, 1996
WIPO	World Intellectual Property Organisation

1 Introduction

1.1 Background

In 2000, Larry Page, one of the co-founders of *Google Inc.*, the most popular Internet search engine in the world, made the following statement:

Artificial intelligence would be the ultimate version of *Google*. So, we have the ultimate search engine that would understand everything on the *Web*. It would understand exactly what you wanted, and it would give you the right thing... We are nowhere near doing that now. However, we can get incrementally closer to that, and that is basically what we work on. And that is tremendously interesting from an intellectual standpoint.⁵

What he delivered in that speech has now become true. Search engines would not only help you to understand everything in knowledge; they can also assist you in many daily tasks. We now have *Google Assistant*, an artificial intelligence (“AI”) and voice-based personal assistant. Throughout years of development, this platform is now integrated into a variety of devices - from mobile devices, household appliances to even your cars.⁶ Its ability is now also extensive. You can ask for the information you need - the weather, sports results - or even to assist with tasks like calling, texting messages, finding a song, or setting up a to-do list.⁷ With the likes of the users, there are other companies creating competitors in this market and gaining reputation for such products. The prime examples would include *Alexa* from *Amazon*, *Siri* from *Apple* and *Cortana* from *Microsoft*. Software (or platforms) with AI-based algorithms show their promising potential and if used properly, people can discover and invent more incredible things with the help of AI.

In the first years of the 2020s, the discussion of AI and its related technology has gone viral once again. It was the topic of domination in the largest trade show in consumer electronics industry, the Consumer Electronic Show (CES) 2024 in the United States (“US”). J. H. Han, the chief executive officer and head of the device experience division at Samsung, during his speech at this event stated: “*AI is reshaping industries beyond technologies and has the*

⁵ Larry Page - Interview, Academy of Achievement, <https://achievement.org/achiever/larry-page/#interview>, retrieved on 12 February 2024.

⁶ For example, LG has introduced its AI feature, which is integrated in its televisions, called *LG ThinQ AI*. This includes AI-based assistants, specifically *Google Assistant* and *Amazon Alexa*, to be a built-in feature in a selected number of televisions. See more about this feature in those products in *LG OLED TVs – Experience the Power of OLED TV*, LG, <https://www.lg.com/us/oled-tvs>, retrieved on 25 February 2024.

⁷ See more about *Google Assistant*, the ability of this software and how to use it in *Google Assistant, your own personal Google*, Google, <https://assistant.google.com/>, retrieved on 12 February 2024.

power to make lives easier and more inclusive for all".⁸ What is the thing that has brought the attention of the public eyes towards AI once again? The answer is generative artificial intelligence (“**GenAI**”).

From what we know until today, what GenAI can do is phenomenal. It can be seen as an upgraded version of a search engine – a combination of such engine, a personal assistant and even a real-time encyclopaedia. Many products are trying to integrate AI, or GenAI as one of the notable features, to make it more appealing compared to their competitors on the market. This has been commonly applied in search engines, software or applications. With the broad knowledge within its database, GenAI would find information more effectively and more accurately in real-time situations. When integrated into such software, GenAI would boost the workflow more productively, only through some simple prompts. The most notable feature of this technology is its ability to create new animations, audios and videos only through the pure texts given by the users.⁹ Compared to the ability of AI in the sector of voice assistant (like the case of *Google Assistant* or *Alexa*), GenAI is a huge leap.

However, GenAI has also raised concerns from many angles, particularly in the legal field. In 2023, a group of authors from the US, including the author of *Games of Thrones* – George R.R. Martin – have brought a claim against *OpenAI*. A similar claim was also brought by one of the most reputable newspapers in the world – *The New York Times* – against *OpenAI* and its parent company, *Microsoft* in the US courts. Those claims concerned copyright infringement. To be specific, the American authors accused *OpenAI* of using its GenAI tool, *ChatGPT*, to copy their works without permission or consideration and included such copyrighted materials within its database. For claimants, *OpenAI* “could have trained its tool in the public domain instead of pulling in copyrighted materials without paying a licensing fee”.¹⁰ Somewhat similar, *The New York Times* sees the fact that *OpenAI* using the articles of

⁸ I. Khan, *AI Is Dominating CES 2024. You Can Blame ChatGPT for That*, CNET, 11 January 2024, <https://www.cnet.com/tech/ai-is-dominating-ces-2024-you-can-blame-chatgpt-for-that/>, retrieved on 13 February 2024.

⁹ Applications of *Adobe*, like *Photoshop* or *Illustrator*, have applied GenAI as a “co-pilot” for users. GenAI is used to generate ideas (create colours, palettes, themes, video templates and images) from the input of users – in the form of texts. It also has the ability to summarise the key points in the documents and answer questions concerning the sources included in such documents when used in *Acrobat*. See more in *Welcome to Generative AI*, Adobe, 20 February 2024, <https://helpx.adobe.com/creative-cloud/generative-ai-overview.html>, retrieved on 25 February 2024.

¹⁰ E. David, *George R.R. Martin and other authors sue OpenAI for copyright infringement*, The Verge, 20 September 2023, <https://www.theverge.com/2023/9/20/23882140/george-r-r-martin-lawsuit-openai-copyright-infringement>, retrieved on 28 February 2024. See more details about the dispute in Case 1:23-cv-08292-SHS, *Authors Guild and Others v. OpenAI Inc and Others*, US District Court for the Southern District of New York, 5 December 2023, <https://www.courtlistener.com/docket/67810584/40/authors-guild-v-openai-inc/>, retrieved on 28 February 2024.

this newspaper for the GenAI tool database, which are the copyrighted materials, as an unlawful act of “copying and using the uniquely valuable works of the Times”, to compete with this newsroom as a source of trustworthy information.¹¹

However, the focus point of this thesis would not be the unauthorised (potentially unlawful) act of the GenAI tools when including copyrighted materials within their training database. My thesis would like to point out another specific aspect that GenAI could do, the ability to create images. Can the images generated by GenAI, through the input text prompts as the only human contribution to these works, be protected under the regime of EU copyright law?

To find the answer for this matter, this thesis does not only look at EU copyright law, adopted by the EU institutions. In the following parts, the thesis would also look at other legal frameworks from different countries, specifically the EU Member States (“MS”), the US and the People’s Republic of China (“China”). After the assessment of those frameworks, the thesis would like to propose some possible routes for EU copyright law to take when dealing with the protection of works (specifically images) generated by GenAI through the input texts of the users. In conclusion, the author believes that such protection shall be answered as affirmative.

1.2 Purpose of the thesis and the research questions

As demonstrated in the *Background* section, AI is now in the heated discussion on the topic of technology, especially the stories linked to GenAI and its application.¹² The purpose of this thesis would like to discuss one side of the AI story in the legal perspective, analysing the relationship between copyright law and works created through GenAI tools. This perspective can be formulated into the research questions of this master thesis, as follows:

- *Whether the images (outputs) generated by the algorithm of GenAI tools, only through the input of human users, be protected under the regime of EU copyright law?*
- *Who would be the author of such images, and who would be considered as the owner of the rights attached to AI-generated images?*

¹¹ M. M. Grynbaum and R. Mac, *The Times Sues OpenAI and Microsoft Over A.I. Use of Copyrighted Work*, The New York Times, 27 December 2023, <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>, retrieved on 29 February 2024. See more details about the dispute in Case 1:23-cv-11195, *The New York Times Company v. Microsoft Corporation, OpenAI, Inc. and Others*, US District Court for the Southern District of New York, 27 December 2023, https://nytimesco-assets.nytimes.com/2023/12/NYT_Complaint_Dec2023.pdf, retrieved on 29 February 2024.

¹² See Part 1.1, *Background*.

The issues between AI-generated images and copyright law will be further analysed in the following parts, and the aforementioned questions will be answered at the end of this thesis.

1.3 Previous legal research on the topic

AI is not a new topic in general knowledge anymore. This concept has gone viral since the early 2000s, with the appearance of robot characters in science fiction movies. However, the idea of GenAI and the ability of GenAI tools to generate pictures is a new horizon for human beings. With the release and development of such tools, first with *ChatGPT* in 2022, the technology world and the public eye received a shockwave from the use of GenAI tools.¹³ Many heated debates have arisen about its promising potential, on GenAI application and how the world would be affected by this technology, especially in the employment sector. On the other side, other concerns were raised, worrying about GenAI invading privacy, leveraging intellectual properties (“IP”), generating sensitive contents or generating misinformation that was incorrectly cited, which would be harmful to users.¹⁴

Legal scholars, for example M. Kop already had initial discussions about AI, to the point that it would create works that are subject to copyright law before the born of GenAI, or scenario of AI capable of generating works become as clear as what we are seeing.¹⁵ The big difference between the former research on this topic compared to this thesis is not only about the fast pace in the change of AI technology, with the debut and development of GenAI. It is also the evolvement of the legislation in the AI field, with the first remarkable legal act for AI in the EU, and particularly the certain caselaw in the US and China that play a crucial role in the assessment of the research questions. Those instruments can help us draw the different routes that the legislators would take in the issue of copyright protection for AI-generated works.

When illustrating this situation in a few years ago, there was not any proper legal framework specialising in AI, to propose an answer to such situation, especially in the law of the EU.¹⁶ However, the lack of a concrete legal basis cannot prevent the authors from analysing and giving recommendations on

¹³ See the impact of GenAI in W. Wright, *Reflecting on one year of ChatGPT: how has the world been changed?*, The Drum, 30 November 2023, <https://www.thedrum.com/news/2023/11/30/reflecting-one-year-chatgpt-how-has-the-world-been-changed>, retrieved on 29 February 2024.

¹⁴ *The flip side of generative AI*, KPMG, 2023, <https://kpmg.com/us/en/articles/2023/generative-artificial-intelligence-challenges.html>, retrieved on 29 February 2024.

¹⁵ See for example, M. Kop, *AI & Intellectual Property: Towards an Articulated Public Domain*, Texas Intellectual Property Law Journal, Vol. 28, No. 1, University of Texas School of Law, 2020, pp. 297-341.

¹⁶ For example, see E. Hubert, *Artificial Intelligence and Copyright Law in a European context - A study on the protection of works produced by AI-systems*, Lund University Publication, 2020, p. 9.

how to address the issues and settle this legal relationship most reasonably. In her thesis, Hubert proposed a bold solution, “to create an exception” for AI-generated works to soften the originality conditions in IP law, or further, remove this condition to grant copyright protection for such works.¹⁷ In a way following the same path, A. Guadamuz suggested that in the future, the regulation model of the UK is looking as the most efficient road to follow, granting copyright protection to the one “*who made the operation of AI possible*”.¹⁸ There have also been useful articles comparing how different jurisdictions or surveys illustrating how they would view the relationship between AI and copyright law.¹⁹ This can also be seen as a reliable reference to see how practitioners in the AI field or academia in the legal sectors think about this matter.

1.4 The scope, or the delimitation of the thesis

Copyright law, or broader, IP law has always been an issue that attracts the attention of legislators and scholars globally. With its impact to our daily lives, there have been efforts to harmonise the rules in this field at the international level. Until now, there are specialised organizations in IP law that have adopted respective legal instruments to govern this area, for example World Intellectual Property Organisation (“**WIPO**”).²⁰ Nevertheless, with the principle of sovereignty, each country would have its own framework to govern intellectual property rights (“**IPR**”) in their national law. In addition, the principles, the rules and the legal procedures related to IP law may vary, depending on the will of the national legislators. Despite such independent competences, as a Contracting State of international legal instruments, it is crucial to take a first look at the IP law documents that are harmonised at the international level. Starting from this point, we can see how the most basic standards on the copyright protection is applied uniformly around the world.

From that standpoint, I would like to take a more detailed look on EU law to make a proposal on how EU institutions should deal with the matter, to answer the research questions of this thesis.²¹ Not only do this thesis look at the legal documents, guidance from the EU institutions, or the case law from the EU courts, the law of MS also plays a crucial role to solve a legal issue within

¹⁷ *Ibid*, p. 39.

¹⁸ A. Guadamuz, *Artificial intelligence and copyright*, WIPO Magazine, May 2017, https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html, retrieved on 1 March 2024.

¹⁹ See for example C. Watiktinnakorn, J. Seesai and C. Kerdvibulvech, *Blurring the lines: how AI is redefining artistic ownership and copyright*, Discovery Artificial Intelligence, Vol. 3, No. 37, Springer, 2023 and K. Hristov, *Artificial Intelligence and the Copyright Survey*, Journal of Science Policy & Governance, Vol. 3, Issue 1, Harvard GSAS Science Policy Group, April 2020 for the surveys about AI and copyright law.

²⁰ Other legal instruments aim for the harmonization of IP law at the international level including the *Madrid System* for registering and managing trademark protection, or the *TRIPS* (Trade-Related Aspects of Intellectual Property Rights) Agreement for the rules of IPRs within the framework of regulation in WTO (World Trade Organization).

²¹ See the research questions at Part 1.2, *Purpose of the thesis and the research questions*.

the Union. This logic will also be reasonably applied for the relationship between AI-generated images and the copyright protection for such works. For this assessment, the thesis will particularly draw an interest in Spain, France and Czech Republic. These are some of the MS that are having an eager attitude towards AI by planning policies to integrate the regulations to govern AI in its national law, in the case of Spain. For the French government, they have paid attention to this issue even before the release of GenAI technology, and already had some proper national IP legal provisions to govern the relationship between AI-generated works and copyright. The most recent notable event on this discussion in MS occurred in Czech Republic, with the first court judgement within the EU to deal with the ownership (and the authorship) of AI-generated images, at the national level.²²

Outside the EU, there are a few other countries that we can draw some similarities to the Union in this matter. The crystal-clear examples are the US and China. Some remarkable points can be listed as follows. Firstly, they are the global leaders in technology, who would likely be the first ones to come up with modern techniques to solve modern issues, like AI. Just like the EU, the US and China are now focusing on AI and its related fields, not only from the scientific or technological perspectives, but also trying to find the proper legal instruments to govern this technology. Lastly, the most important reason that can directly be linked to the thesis is that the EU, the US and China are all developed in the field of IP law. They are now having an extensive legal framework, both procedurally and substantially to safeguard IPRs within their legal systems. From those foundations, it is reasonable to analyse the law of the US and China, to propose the solutions for copyright protection for AI-generated images for the EU at the end of this thesis.

With the ability of AI and GenAI, the potential for the application of this technology, in the eyes of society, seems to be unlimited. However, as demonstrated in the previous section, the main discussion of the thesis is only to assess the possibility of copyright protection towards AI-generated images.²³ Throughout years of development, AI has had the ability to generate artworks like a human artist for a long time. However, due to the limited capability of the technology back in the days, the process for this creation is complicated and time-consuming. Today, that perception has changed with the rise of GenAI. Only through a few commands in pure text, GenAI tool would use its algorithms and make use of the pre-trained database to create images as a result. With the ease of GenAI in creating pictures, there are still questions left unanswered that raised concerns to the legislators, the operator of such tools and the users, on what shall be the uniform answer to the copyright protection for works generated by AI. In this thesis, the AI tools that we focus

²² See Part 5, *Current route for EU copyright protection for AI-generated images*.

²³ *Ibid.*

on, and are limited to be in the form of GenAI. Only through the input of text as a command, GenAI can later create artworks like a human artist.²⁴

As stated in *Part 1.2*, the thesis would focus, and therefore put its limit on the topic of copyright protection for AI-generated works. On this assessment, the criterion of “*originality*” will be the hot potato, with different opinions that will be elaborated thoroughly in the following parts of the thesis.²⁵ This thesis will extend this discussion, to propose the answer on who should be considered the author of such works, and who should be the owner of this right, if protected by law. This paper will not go further into other topics in discussion, for example, the possibility of AI being recognised as a legal person in the respective legal systems.

1.5 Research methodology and sources in use

To properly answer the research questions put forward in the thesis, a combination of different research methods will be used. The main method will be the *legal dogmatic method*. To be specific, this method is described as:

... a systematic exposition of the principles, rules and concepts governing a particular legal field or institution and analyses the relationship between these principles, rules and concepts with a view to solving unclarities and gaps in the existing law.²⁶

To make it clear, the thesis will include firstly, the EU legislation, consisting of primary and secondary law, along with other legal guidance and preparatory documents from the EU institution. The method is also conducted in combination with the assessment of the caselaw of the Court of Justice of the European Union (“**CJEU**”). From such foundations, the thesis will analyse EU law to find the proper answer to the research questions.

Another method that would be used in this thesis is the *comparative method*, which is defined, in the sense of legal research as:

... a systematic exposition of rules, institutions, and procedures or their application prevalent in one or more legal systems or their

²⁴ See more details in Part 2.2, *The history of AI (or GenAI) generating images* and Part 4, *Copyright protection towards AI-generated images outside the EU*.

²⁵ See Part 3.3, *Originality in EU copyright law*. The assessment about this criterion was also conducted in other jurisdictions outside of the EU, as further illustrated in Part 4, *Copyright protection towards AI-generated images outside the EU*.

²⁶ J. M. Smits, *What is legal doctrine? On the aims and methods of legal-dogmatic research*, in R. van Gestel, H. Micklitz and E. L. Rubin, *Rethinking Legal Scholarship: A Transatlantic Dialogue*, Cambridge University Press, 2017, pp. 207-228.

sub-systems with a comparative evaluation after an objective estimation of their similarities and differences and their implications.²⁷

As of now, there has not been any official legal document or implicit guidance to govern the copyright protection for AI-generated works in the EU law. That is why, not only the current framework of EU is in consideration in this thesis. Specifically, after the assessment of the law and cases of MS (France, Spain and the Czech Republic) and other countries outside the EU (the US and China), there would be a comparison between such legal systems, to see the differences in their approaches and the notion of the legislators in the respective countries behind their choices. At the end, the thesis would like to potentially propose the answer for this legal issue in the framework of EU law when it comes to the copyright protection for AI-generated works in general, and particularly artworks created on this platform. For this thesis, the main emphasis would be substantial law, rather than procedural rules of the concerned legal systems.

Additionally, one of the remarkable features of the legal relationship concerned in this thesis would be the “non-traditional” nature and its unprecedented impact towards copyright law. For that reason, in the discussion between AI and copyright law, all of the relevant parties shall also be considered, particularly with their benefits. In the following parts of this thesis, it is worthy to note that the balance of interests is one of the main keys to answer any copyright law discussion. This is also applied to the research questions, with one of main interests that would be the economic benefits connected to the concerned parties. During the analysis on the impact of the rejection towards copyright protection to AI-generated artworks, it may lead to the endangerment of the economic benefits to all of the parties, if such works fall into the public domain. To analyse this perspective, it is in need to use the method of *law and economics*. In the broadest sense, this method is explained as “*the economic analysis of law, concerns the methodology of economics*”.²⁸ To be more specific, this thesis will consider the consequences of not accepting (or accepting) the protection of copyright towards AI-generated images in view of the costs-and-benefits analysis, to see what are the trade-offs for the concerned parties if such works fall under the public domain, and would the AI-generated images be in need of a copyright protection mechanism to safeguard such benefits.

For the sources that are in use for the thesis, the starting point would be the primary and secondary legal documents of the EU law, including the international instruments where the EU, its MS and the other concerned countries

²⁷ P. I. Bhat, *Idea and Methods of Legal Research*, Oxford University Press, 2018, p. 269.

²⁸ A. M. Paccès and L. T. Visscher, *Methodology of Law and Economics* in B. van Klink and S. Taekema (eds.), *Law and Method Interdisciplinary Research into Law*, Mohr Siebeck, Tübingen, 2011, pp. 85-107.

are the Contracting States. This, as aforementioned, would help draw the comprehensive framework of the copyright law and the set of regulations for AI in the Union. The official legal documents and caselaw regarding the law of the concerned MS, the US and China would also be used to see other approaches from legislators outside the EU institutions on this matter. Besides that, academic resources, for example, books, scholarly articles, research papers, journals, official legal blogs, websites and other similar materials will be used in this thesis. This would illustrate another aspect of the debate for (or against) copyright protection for AI-generated images, which would also be helpful for the conclusion of the thesis.

1.6 Structure of the thesis

The thesis will begin by the definitions of AI and GenAI (*Part 2*). Getting to know about this technology, on how they evolve and work properly is crucial, before the assessment of protection for images created by this technology under copyright law. This section will more focus on the legal perspective, on how the legislators aim to define, and place AI (or GenAI) within the legal system. The answer on the role of AI, in respect of its legal capacity, may also hint the possibility for copyright protection towards AI-generated works. After this, comes the introduction to the general framework and the principles of EU copyright law, especially the criteria for a work to earn to protection under this regime (*Part 3*). As mentioned previously, there has not been any official answer to the research questions of the thesis within the legal framework of EU law. That is why, the thesis will also demonstrate other legal opinions from different countries on this matter, especially on their caselaw to see how the concerned legal relationship is resolved (*Part 4*). In this part, the thesis will analyse the arguments the caselaw have used to answer the riddle of copyright protection for AI-generated works. The thesis will later try to take a look, to see if there is any possible answer to solve the research questions at the moment, within the existing framework of EU copyright law, or is it possible to find such protection in the MS. Should the legislators apply such rules from third countries to solve this riddle, or should the law create another set of arguments to safeguard copyright protection (illustrated in *Part 5*) before going to the conclusion and remarks of this thesis (*Part 6*).

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2 AI and GenAI

Before going to the story of copyright law protection for works created by GenAI tools, it is important to define the technology used in those tools, AI and GenAI. The thesis will first define AI and GenAI in the view of general knowledge (*Part 2.1*). This part will illustrate the first picture of AI and GenAI, what they are and what is the difference between the two terms. The next part focus on the main subject of the thesis, AI-generated works. This part will describe the history in the use of AI algorithms, and later GenAI to create arts. It would also explain the process of GenAI creating artworks, which will be a crucial to assess for the possibility of granting copyright protection (*Part 2.2*). The last aspect to be discussed in this part is the perception of legislators towards the terms AI and GenAI (*Part 2.3*).

2.1 What is AI and GenAI?

2.1.1 Artificial Intelligence (AI)

Tracing back the flow of history, AI technology started in 1943, with the first work that is now generally recognised as AI created by Warren McCulloch and Walter Pitts.²⁹ In short, this is a mathematical and computer model of the biological neuron. The machines formerly discussed, however, are still much less advanced compared to the AI that we have today. In 1950, Alan Turing published an article named “*Computing Machinery and Intelligence*” that raised one of the first discussions for a theory, commonly named the Turing test or an imitation game, “*where a human should be able to distinguish... whether he is talking to a man or a machine*”.³⁰ This is considered the first academic landmark for the definition of AI. When mentioning AI, especially in the late years of the last century or in the early 2000s, it went viral through the appearances in sci-fi movies. AI can be seen in the form of a machine/computer (like *HAL 9000* in *2001: A Space Odyssey* or *Skynet*) or robot characters, (like *Wall-E* or *Terminator*). No matter their role, these characters contribute to “*the world that they are living in*”. They also convey the desire of humanity, to have automated technology to improve our lives.

Throughout years of development, this technology has made significant leaps. One of the latest blooms in this technology occurred in the 2010s. This happened due to the ability of the very high efficiency of computer graphics card processors to accelerate the calculation of learning algorithms; the other reason is the possibility of the tools getting access to massive volumes of data.³¹

²⁹ See Chapter 1.3, *The History of Artificial Intelligence* in S. Russel, P. Norvig, *Artificial Intelligence: A Modern Approach (4th edition)*, Pearson, 2021, pp. 17-26.

³⁰ *History of Artificial Intelligence – Artificial Intelligence*, Council of Europe, <https://www.coe.int/en/web/artificial-intelligence/history-of-ai>, retrieved on 4 March 2024. See A. M. Turing, *Computing Machinery and Intelligence*, *Mind*, Vol. 59, Issue 236, Oxford University Press, October 1950, pp. 433-460.

³¹ *Ibid.*

A simple input given to *Google* may generate hundreds of millions of search results within less than a second. This is also one of the factors that lead to the appearance of AI-based assistants like *Google Assistant* or *Amazon Alexa*.³² For now, AI has involved in many sectors. It can be related to physical robotics, computer deep-learning or biometric recognition mechanism. Some more of the AI-integrated fields can be listed, for instance production development, marketing, customer services or even healthcare and human resources.³³ With the deep, extensive integration of AI nowadays, it is a hard task to give out an appropriate definition that covers the complete picture of AI, with fully its function and applicability. During the initial development of this technology, AI was first mentioned and defined as follows:

*The study [of artificial intelligence] is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves.*³⁴

It is amazing to know a more-than-70-year-old definition still covers all of its important aspects. However, with more knowledge that people have acquired throughout its development, there are more ways to define AI. John McCarthy, one of the authors of that former definition, simplified the concept of AI in the broad sense as “*the science and engineering of making intelligent machines, especially intelligent computer programs... related to the task of using computers to understand human intelligence*”.³⁵ McCarthy successfully simplified its content compared to the former one, however, it did not imply the possibility or the goal of this technology to “*simulate the human brain*”, to attain human intelligence.

Other scholars, academic or governmental entities have also aimed to properly define AI. For the general knowledge of today, AI is understood as “*the ability of a digital computer or computer-controlled robot to perform*

³² See Part 1.1, *Background*. In this section, I already described the practical use of AI-based personal assistants in our daily lives, and how those tools are now integrated into mobile devices or household appliances.

³³ M. Chui, B. Hall, H. Mayhew, A. Singla and A. Sukharevsky, *The state of AI in 2022—and a half decade in review*, QuantumBlack AI by McKinsey, 6 December 2022, <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2022-and-a-half-decade-in-review/>, retrieved on 4 March 2024.

³⁴ J. McCarthy, M. L. Minsky, N. Rochester and C. E. Shannon, *A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955*, AI Magazine, Vol. 27, No. 4, Association for the Advancement of Artificial Intelligence (AAAI), 2006, p. 12.

³⁵ J. McCarthy, *What is Artificial Intelligence?*, Formal Reasoning Group, Stanford University, 12 November 2007, <https://www-formal.stanford.edu/jmc/whatisai.pdf>, retrieved on 5 March 2024.

tasks commonly associated with intelligent beings".³⁶ In another way, a technical developer in *Google Cloud*, when introducing GenAI, approached AI as "*the theory and development of computer systems able to perform tasks normally requiring human intelligence*".³⁷

Despite the different approaches in the definition of AI, one big similarity can be drawn. They are still unclear in the demonstration of the full capabilities of this technology. More importantly, they do not adequately reflect (or not reflect at all) the legal view towards this term, especially in the field of IP or copyright law. However, in my opinion, they have accomplished the task of giving the conspectus of AI in general understanding.

2.1.2 Generative Artificial Intelligence (GenAI)

The latest boom in the world of AI began after the outbreak of the COVID-19 pandemic, with the release of the public version of *ChatGPT*.³⁸ This is also the first time "generative AI" went viral to the public. However, the beginning of this technology had started years before, with the birth of *OpenAI*, the parent company of *ChatGPT*. This company was founded in 2015, with the involvement of big names in the technology sector like *Elon Musk* or *Amazon*. At first, this is a non-profit institution for researchers to share their works a place for this firm and collaborate with them to deploy new technologies in the field of AI.³⁹ For now, the main focus of *OpenAI* is in the field of new implications of AI, particularly GenAI, researching for its new models and align the operation of this technology with human values.⁴⁰ Despite being the most reputable name in this field, *OpenAI* is not the first player in this market. *Jasper AI*, a GenAI chatbot specialised in the field of marketing, with the capability of generating blog posts, social media contents, emails and SEO (search engine optimization) is the pioneer in this technology.⁴¹ There are other notable competitors worth mentioning, like *Google Gemini*; and even *Apple* is now planning to investing in this sector and incorporating GenAI

³⁶ B. J. Copeland, *artificial intelligence*, Britannica, 4 March 2024, <https://www.britannica.com/technology/artificial-intelligence>, retrieved on 5 March 2024.

³⁷ G. Stripling, *Introduction to Generative AI*, YouTube, uploaded by Google Cloud Tech, 9 May 2023, <https://www.youtube.com/watch?v=G2fqAlgmoPo>, retrieved on 6 March 2024.

³⁸ Coronavirus disease (COVID-19) is a disease first reported at the end of 2019 in Wuhan, China and later became a global pandemic, caused by the SARS-CoV-2 virus with hundreds of millions of infections. For the release of *ChatGPT*, it was debuted on 30 November 2022.

³⁹ G. Brockman, I. Sutskever and OpenAI, *Introducing OpenAI*, OpenAI, 11 December 2015, <https://openai.com/blog/introducing-openai>, retrieved on 6 March 2024.

⁴⁰ *About*, OpenAI, <https://openai.com/about>, retrieved on 6 March 2024.

⁴¹ T. Murphy, *The evolution of chatbots and generative AI*, TechTarget, 25 April 2023, <https://www.techtarget.com/searchcustomerexperience/infographic/The-evolution-of-chatbots-and-generative-AI>, retrieved on 6 March 2024. Get to know more about *Jasper AI* at their website, *Jasper – AI copilot for enterprise marketing team*, <https://www.jasper.ai/>, retrieved on 6 March 2024.

into the products in its ecosystem.⁴² To illustrate how attractive this technology is in the economic perspective, a survey conducted by *McKinsey* concluded GenAI could have the potential to add trillions of US dollars in value to the global economy, with a significant impact across all industry. Despite its incredible potential, the statistics is only provided based on the initial picture of GenAI. There are more hidden gems waiting to be discovered, since this is only the dawn of this technology.⁴³

With the appealing story of GenAI, it is also necessary to explain what it is. In a simple way, the starting point of GenAI would be the other subsets of AI, particularly machine learning and deep learning.⁴⁴ GenAI has all of the features of its aforementioned branch. It is also based on artificial neural networks that can handle the processing of labelled or not labelled data, through supervised, unsupervised or semi-supervised models.

In the general understanding, the creation of a GenAI chatbot (like *ChatGPT*, or *Google Gemini*) would start with a *transformers model*. This model uses mathematical techniques to form a neural network to track and link data elements in a series that influence and depend on each other. The result of this model is the ability of it to translate text and speech in near real-time speed, or make online recommendations through the user inputs when they are typing texts.⁴⁵ The most popular application of this model can be seen on search engines like *Bing* or *Google*. For AI chatbots the transformers models that they are using are different from the formers. These types of models are considered as the most advanced, and also the most successful evolvement of this method – *large language model*. This is the place where deep learning is applied, using the algorithms to create an AI system in a whole, which the chatbot is also a part of. With this model, AI can recognise, summarise, translate, predict and generate text and other contents; with their understanding not only

⁴² S. Nellis, *Apple disclose AI plans later this year, CEO Tim Cook says*, Reuters, 29 February 2024, <https://www.reuters.com/technology/apple-shareholders-reject-ai-disclosure-proposal-2024-02-28>, retrieved on 6 March 2024.

⁴³ See more about the economic assessment of GenAI in M. Chui, R. Roberts, L. Yee, E. Hazan, A. Singla, K. Smaje, A. Sukharevsky and R. Zimmel, *The economic potential of generative AI: The next productivity frontier*, McKinsey Digital, 14 June 2023, <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#introduction>, retrieved on 6 March 2024.

⁴⁴ Machine learning is the field of study in AI concerned with the algorithms that give computers the ability to learn without any explicit programming or coding from the developers, with supervised or unsupervised models, concerning labelled or not labelled data. For deep learning, it is a subset of machine learning, based on artificial neural networks; compared to traditional machine learning methods, deep learning can process more complex algorithms. See more in *ibid*, footnote no. 37.

⁴⁵ R. Merritt, *What Is A Transformer Model?*, Nvidia, 25 March 2022, <https://blogs.nvidia.com/blog/2022/03/25/what-is-a-transformer-model/>, retrieved on 7 March 2024.

limited to human languages, but also complicated “structured language” in software coding.⁴⁶

This leads to the result of GenAI chatbots with phenomenal capabilities compared to a search engine, a traditional model of AI - or commonly known as weak AI. This is the key difference to distinguish traditional models of AI and GenAI. While weak AI systems are primarily used to analyse data and make predictions, and “*can only tell you what they see*”, GenAI systems would open a new frontier, going further by creating new data based on its existing knowledge, “*to create something entirely new*”.⁴⁷ Some of the most notable applications of this new technology will be demonstrated as follows, from the basis of the *large language models*. For example, *ChatGPT* is a GenAI platform, based on different models like GPT-3.5 or GPT 4 to have human-like conversations, capable of providing general knowledge, solving mathematical issues or even proposing a solution if the users “educate” this system with adequate information. Another example of the ability of this chatbot is to assist human users in writing articles, essays, emails or building resumes based on the instructions through the inputs of the users, in the form of text prompts.⁴⁸

Elaborating more on this topic, the development of a GenAI model needs to go through a process of “*training*”. This would help the AI model acquire more knowledge and become “smarter”. After the “*training*” session by its developers, this model would more have information in its database. When the training is “comprehensive enough”, it is the time for the end users to be able to use the GenAI tools properly. A number of methods, depending on the inputs of the users would facilitate the AI models in generating results based on their designed capabilities. In particular, the inputs can be texts, or images to the AI model. The AI model may operate in the forms of text-to-text (like *ChatGPT* using GPT-3.5 or GPT-4), text-to-image (like *Midjourney*), text-to-video, text-to-sound or text-to-task.⁴⁹ A GenAI tool can also be integrated with many AI models (for the case of *ChatGPT* or *Google Gemini*) to become an all-in-one tool that would answer the requests of the users in the most efficient way.⁵⁰ The birth of GenAI tools has given a big impact on how people

⁴⁶ A. Lee, *What Are Large Language Models Used For?*, Nvidia, 26 January 2023, <https://blogs.nvidia.com/blog/2023/01/26/what-are-large-language-models-used-for/>, retrieved on 7 March 2024.

⁴⁷ B. Marr, *The Difference Between Generative AI And Traditional AI: An Easy Explanation For Anyone*, Forbes, 24 July 2023, <https://www.forbes.com/sites/bernard-marr/2023/07/24/the-difference-between-generative-ai-and-traditional-ai-an-easy-explanation-for-anyone/>, retrieved 7 March 2024.

⁴⁸ S. Ortiz, *What is ChatGPT and why does it matter? Here's what you need to know*, ZDNet, 20 February 2024, <https://www.zdnet.com/article/what-is-chatgpt-and-why-does-it-matter-heres-everything-you-need-to-know/>, retrieved on 7 March 2024.

⁴⁹ *Ibid*, footnote no. 37.

⁵⁰ Google Gemini is now claimed to consist of three language models “within its family” – *Gemini Ultra*, *Gemini Pro* and *Gemini Nano*, and each one would have a different

would acquire knowledge; looking further, there are potential for this technology to change the global economy and the situation of the labour workforce. For now, we need to find a way catch up with the development of this GenAI to have a proper assessment to reach the conclusion on its capabilities, its limitations to predict of how this technology will be in the future. Every effort made in this field only aims for the ultimate destination, the development of AI for good sake, aligning with human rights and values. It is in need of the developers, users and the government shall work together to have a proper framework to govern and control AI (and GenAI) properly.

2.2 The history of AI (or GenAI) generating images

Like the story of AI technology, AI arts, or more specifically, images created by AI algorithms had the same beginning, in the mid-20th century. In academic papers, AI art is also called by different terms, as “*computer art*”, “*math art*”, or “*algorithmic art*”.⁵¹ Surprisingly (or not), the early pioneers on the combination of AI and arts are also scientists and engineers who were having their initial research on AI in the lab of their university. In short, the combination between AI and art started in the decades of 1950 and 1960. In the 1970s, this form of art evolved and went beyond the walls of computer labs to the outer world.⁵²

As a definition, “*computer art*” typically refers to any form of graphic art or digital imagery which is produced with the aid of a computer, or any types of art in which the role of the computer is emphasised. This definition is broad, which would include other forms of modern art relying on the use of computer (*like applied art or animation*). Compared to those forms, AI art is much more sophisticated and far more revolutionary. That is why, nowadays people would rather refer these works as “*digital art or media art*”. This flow of art is also classified to different types, depending on the amount of effort that the computer (or human) would contribute to create the artworks. With this classification, images created from the GenAI tools and algorithms, originated from the text-prompts description of human users shall be considered as “*generative art*”. It is described as artworks “*generated in a random automated manner by a computer program using a mathematical algorithm*”. To qualify as a work of this classification, its creation must be “limited” in the influence of the human artist only setting the ground rules for the formula for the machine, who would later elaborate from such formula, using its techniques and

usage, depending on the task. See more about the models in *Gemini*, Google DeepMind, <https://deepmind.google/technologies/gemini/#introduction>, retrieved on 7 March 2024.

⁵¹ These terms are mentioned in different articles. See for example G. Greenfield, *When the machine made art: the troubled history of computer art*, Journal of Mathematics and the Arts, Vol. 9, Issue 1-2, Taylor & Francis, 2015, pp. 44-47 or A. Elgammal, *AI Is Blurring the Definition of Artist*, American Scientist, Vol. 107, No. 1, Sigma Xi, 2019, p. 18.

⁵² A. Hencz, *What is Generative Art? From Seminal Experiences to New Frontiers*, Artland Magazine, <https://magazine.artland.com/generative-art/>, retrieved on 8 March 2024.

algorithms to produce the drawings. Besides AI-generated images, another example of this type of work is robotic sculptures, both of which have introduced new behaviours to this art form.⁵³

To see how the combination of AI and art has changed over time, we can see the story of *AARON*. Harold Cohen was a painter, printmaker and designer of textiles; however, for many people, especially AI arts followers, he is best known as the creator of *AARON*. This machine is considered as the “*pioneer in computer art, algorithmic art and generative art*”. It is also “*one of the longest-running continually maintained AI systems in history*”. The creation of this machine comes from two inspirations as (1) the eager of Harold to find the answer on the nature of creativity for artworks; and (2) his interest in computer technology.⁵⁴ In the 1970s, as a researcher in the field of AI, he started the project to create a computer program that would codify the act of drawing, *AARON*.⁵⁵ In the first years of development, the system only had a limited idea of human cognition, with limited specific knowledge of the external world. It was only intended to “*identify the functional primitives and differentiations... in the making of paintings and drawings*”, but the ability it had demonstrated showed its potential to become an incredible machine. Until 1973, this system could generate autonomous outputs, with black-and-white sketches. It was not until 20 years later, that another big step did *AARON* achieve, with the ability to add colour to such drawings.⁵⁶ With his passion towards arts and AI, Harold continued the this project until his last days.⁵⁷ Not only Harold, before the generative arts (or AI-generated arts) went viral as today, there have been other enthusiasts, with a significant number of published artworks within this field.⁵⁸

One of the recent notable events that raised concerns about copyright protection to generative arts is the case of *The Next Rembrandt*. This is a project started in 2016 with the goal is to create a new painting inspired from the previous works of the late *Rembrandt*, a famous Dutch painter. The special point about this painting is that it was fully created by an AI-powered program. The result of this collaboration is “an algorithm” that analysed all the

⁵³ See more about the history of this art form in *Computer Art - History, Characteristics of Digital Imagery*, Visual Arts Encyclopedia, <http://www.visual-arts-cork.com/computer-art.htm>, retrieved on 8 March 2024.

⁵⁴ C. Garcia, *Harold Cohen and AARON - A 40-Year Collaboration*, Computer History Museum, 23 August 2016, <https://computerhistory.org/blog/harold-cohen-and-aaron-a-40-year-collaboration/>, retrieved on 9 March 2024.

⁵⁵ K. Vass, *Harold Cohen: “Once Upon A Time There Was An Entity Named Aaron” – computer art*, Kate Vass Galerie, 30 April 2020, <https://www.katevassgalerie.com/blog/harold-cohen-aaron-computer-art>, retrieved on 9 March 2024.

⁵⁶ See more about the development of the machine at *The Robotic Artist: Aaron in Living Colour, Harold Cohen at The Computer Museum; April 1 – May 29, 1995* in *ibid*.

⁵⁷ Get to know more about Harold and the works made by *AARON* in *Harold Cohen Home Page*, <https://www.aaronshome.com/aaron/index.html>, retrieved on 9 March 2024.

⁵⁸ Some of the notable artists in the field of generative artwork include Manfred Mohr, Frieder Nake and recently, Rafael Lozano-Hemmer. See *ibid*, footnote no. 52.

previous works of the late Dutch painter. This, combining with the with facial recognition technology, created a new and unique work of art that emulates Rembrandt’s style and technique. In this original artwork, hardly any creative element from humans was involved. This event was remarkable and fascinating not only in the AI field, but also in the legal perspective when finding an answer for the copyright protection for such works.⁵⁹

Another focus for copyright law scholars, also the main topic of this thesis is not similar to the story of *The Next Rembrandt*. It started from the birth and evolution of GenAI chatbots. Not only do the GenAI chatbots can generate the comprehensive wall of texts from the input of the users, they can also generate pictures only through such simple prompts. One of the prime examples, considered as the pioneer platform of this technology is *Midjourney*.⁶⁰ To describe this tool in summary, this is another further step compared to text-to-text GenAI tools like *ChatGPT*. This platform relies on three crucial “pillars”. The first one is similar to *ChatGPT*, its-own-developed *large language model* to understand the text prompts input by the users. However, this model only helps the platform in understanding the meaning of such prompts. After that, such prompts would be converted to the second factor, which is called *vector*, as a numerical version of input text prompts, into diffusion. The final step is lying within the diffusion process, which would involve both (i) the GenAI tools, when receiving your text prompts, see such text as “*a field of visual noise*”; after that (ii) the tools would use its trained AI model to “*subtract all the noise that this model has seen*” in order to get the result of the requested picture at the end of the process. With a more complicated and lengthy process compared to the text-to-text model in *ChatGPT*, it would take more time to create an image on this GenAI tool compared the only text model.⁶¹ Despite the different ways of operation, algorithms and output results, in theory, the process of making AI-generated images on different platforms (or AI systems) is not much difference. This process constitutes four crucial elements: (i) input; (ii) learning algorithm; (iii) trained algorithm and (iv) output.⁶² However, compared to the formerly known machines that made generative arts like *AARON*, the text-to-images GenAI models would have

⁵⁹ A. Winegar, *Protecting “The Next Rembrandt”*: Evaluating Artificial Intelligence’s Relationship with Copyright Law, Chicago-Kent Journal of Intellectual Property, 26 January 2018, <https://studentorgs.kentlaw.iit.edu/ckjip/protecting-next-rembrandt-evaluating-artificial-intelligences-relationship-copyright-law/>, retrieved on 17 March 2024.

⁶⁰ To “compete” with *Midjourney*, also to expand the capability of the GenAI tool, *OpenAI*, in January 2021, introduced *DALL-E*, a GenAI model specialised in transforming text inputs to images. It is now developed to the third version and is integrated into the paid version of *ChatGPT*. See more of its features and capability in *DALL-E 3*, OpenAI, <https://openai.com/dall-e-3>, retrieved on 12 March 2024.

⁶¹ C. Wankhede, *What is Midjourney AI and how does it work?*, Android Authority, 6 March 2024, <https://www.androidauthority.com/what-is-midjourney-3324590/>, retrieved on 10 March 2024.

⁶² Get to know more about this process in J. Fjeld and M. Kortz, *A Legal Anatomy of AI-generated Art: Part I*, The Harvard Journal of Law and Technology (JOLT), 21 November 2017, <https://jolt.law.harvard.edu/digest/a-legal-anatomy-of-ai-generated-art-part-i>, retrieved on 10 March 2024.

another result in the assessment on how those elements are established, with the human involvement in this process. That would be another key point to find the proper answer to the research questions, to see who the actual author of the AI-generated works in the legal perspective is.

There is no denying that GenAI has recently brought positive attention from the public eyes, with a lot of potential expected to offer. However, with its fast-paced evolution, there are concerns about the unprecedented impacts towards the society, including the violations and invasion of unlawful acts in the field of copyright law.⁶³ That is why, not only the researchers of the AI field, or the users of the AI (or GenAI) tools, it is also the task of the legislators, to get to know the real nature of this technology.⁶⁴ Getting to know what this technology is or how it works will be the first crucial foundation to govern this technology by regulations, which will deeply affect the relationship between AI-generated images and copyright law.

2.3 AI and GenAI under the legal perception

As demonstrated in the previous paragraph, it is an exigent matter for the national legislatures to come up with a proper legal framework towards AI and related matters concerning this technology. In fact, it is not until the explosive growth of GenAI that the legislators started to think about the rules to govern this technology sector. Many countries have started this “project” earlier, including the countries in the scope of this thesis. All those countries have realised the rapid evolution of the AI, and have aimed to build a national, or supranational (in the case of the EU) legal framework for AI governance. However, when looking into the law of the former, it is interesting to see the different legal approaches to deal with this legal matter.

These later sections would assess different legal systems on the definition of AI (and GenAI). This would also be one of the first crucial foundations to determine the possibility of copyright protection for AI-generated images.

⁶³ Read more about the risk of AI in *Common ethical challenges in AI*, Council of Europe, <https://www.coe.int/en/web/bioethics/common-ethical-challenges-in-ai>, retrieved on 11 March 2024.

⁶⁴ S. M. Kelly, *AI is not ready for primetime*, CNN, 10 March 2024, <https://edition.cnn.com/2024/03/10/tech/ai-is-not-ready-for-primetime/index.html>, retrieved on 11 March 2024.

2.3.1 The European Union

With the development of this technology, the EU has already planned and put a lot of effort to invest in AI, with the initial step as the launch of the European AI Alliance in 2018.⁶⁵ In legal perspective, EU notably drew its attention at global level with the AI White Paper proposed by the European Commission (“**Commission**”).⁶⁶ The EU intended to work with the MS, to combine “*technological and industrial strengths with a high-quality digital infrastructure and a regulatory framework based on its fundamental values*” to become the global leader in data economy. In this economy, AI plays a pivotal role, whose policy should be concretely built to achieve “*an ecosystem of excellence*” for the investment in AI research and innovation and a unique “*ecosystem of trust*” in the legal framework towards this technology.⁶⁷ The Commission also set out the key requirements for AI legal framework. However, when discussing the risks causing by this new technology, the main concern is data privacy protection and liability issues, without any mention of copyright law.⁶⁸ With its ambition, EU legislators have set a target to try to adopt the first regulatory framework on AI in the world, and the first draft of such act was published in 2021.⁶⁹ However, the way this first act defined and categorised the AI systems had not included GenAI tools or GenAI chatbots. In its 108-page-proposal, there is only one mention to “chatbot”. Discussing the contents generated by AI, the draft only focused on “deepfakes”. With the explosive interest towards GenAI later the draft was published, there has been a race for the EU legislators to update this regulation, to catch up with the development of AI.⁷⁰

After the political agreement in December 2023, on 13 March 2024, Members of the European Parliament reached a landmark deal to approve the AI Act.⁷¹

⁶⁵ *Artificial intelligence: Commission kicks off work on marrying cutting-edge technology and ethical standards*, European Commission, 9 March 2018, https://ec.europa.eu/commission/presscorner/detail/en/IP_18_1381, retrieved on 13 March 2024 and *The European AI Alliance*, European Commission, <https://digital-strategy.ec.europa.eu/en/policies/european-ai-alliance>, retrieved on 13 March 2024.

⁶⁶ *White Paper on Artificial Intelligence – A European approach to excellence and trust (“AI White Paper”)*, European Commission, 19 February 2020, https://commission.europa.eu/system/files/2020-02/commission-white-paper-artificial-intelligence-feb2020_en.pdf, retrieved on 13 March 2024.

⁶⁷ *Ibid*, pp. 2-3.

⁶⁸ *Ibid*, p. 10.

⁶⁹ *European Commission proposes world’s first ever regulatory framework on artificial intelligence (AI)*, Noerr, <https://www.noerr.com/en/insights/european-commission-proposes-world-s-first-ever-regulatory-framework-on-artificial-intelligence-ai>, retrieved on 14 March 2024. See the full document of the Commission draft proposal on 21 April 2021 at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021PC0206>, retrieved on 15 March 2024.

⁷⁰ M. Coulter, S. Mukherjee, *Exclusive: Behind EU lawmakers’ challenge to rein in ChatGPT and generative AI*, Reuters, 1 May 2023, <https://www.reuters.com/technology/behind-eu-lawmakers-challenge-rein-chatgpt-generative-ai-2023-04-28/>, retrieved on 15 March 2024.

⁷¹ See the Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain

This Act ultimately aims to (i) ensure the safety of AI while in use, particularly the compliance of fundamental rights, the values and the current legal system of the EU. On the other hand, (ii) the Act encourages the innovation and development of AI, to turn the EU into the global leader in the AI field.⁷² In this document, AI and GenAI are not the terms to be specifically defined, however, the starting point of the AI Act focuses on “*AI systems*” as one of the main subject matter in the scope of this act, which means:

a machine-based system designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments;⁷³

This definition has reflected the nature of AI systems, how they work and what they are capable of. Despite calling themselves the first comprehensive legal act in the AI field, EU is not the first entity proposing this definition of AI. Compared to the draft version in 2021, the definition has been modified to align with the way international organisations, specifically the Organisation for Economic Co-operation and Development (OECD) had introduced earlier.⁷⁴ However, in my opinion, this definition, and the way the AI Act works as a whole deliver “*the EU influence*”, since the AI Act must ensure a high level of the fundamental rights in the Charter of Fundamental Rights of the European Union (“CFR”).⁷⁵

EU also sets out a way to categorise AI systems, which draws the public attention towards this legislative act. They are divided into distinct groups, in particular *prohibited systems* (not allowed to operate according to the laws), *high-risk systems* (most addressed in the text of this Act – and subject to certain requirements for lawful operation), and *general-purpose AI* (“GPAI”) *models/systems*. This is a notable point, since GPAI is a new category from the former discussions related to the AI Act. Such models/systems will subject to requirements if systematic risks are seen, with certain assessment with

Union legislative acts (“AI Act”) in *Proposal for the AI Act – Analysis of the final compromise text with a view to agreement*, Council of the European Union, 26 January 2024, <https://data.consilium.europa.eu/doc/document/ST-5662-2024-INIT/en/pdf>, retrieved on 18 March 2024.

⁷² *Artificial Intelligence Act: MEPs adopt landmark law*, European Parliament – News, 13 March 2024, <https://www.europarl.europa.eu/news/en/press-room/20240308IPR19015/artificial-intelligence-act-meps-adopt-landmark-law>, retrieved on 18 March 2024.

⁷³ *Ibid*, footnote no. 71, Recital 6 and Article 3(1) AI Act.

⁷⁴ See the AI definition proposed by OECD with explanation in S. Russell, K. Perset and M. Grobelsnik, *Updates to the OECD’s definition of an AI system explained*, OECD AI Policy Observatory, 29 November 2023, <https://oecd.ai/en/wonk/ai-system-definition-update>, retrieved on 20 March 2024.

⁷⁵ *Ibid*, footnote no. 71, Section II of the Proposal. See Recitals 1, 5 and 6 AI Act.

criteria or from a decision by the Commission.⁷⁶ Not only the grouping of AI systems, the AI Act also lists out the obligations for the compliance of such systems while they are in operation to be compatible with EU law, even with the GPAI models with systematic risks. Some of the obligations are about the risk management system, conducting data governance or providing the instructions for the users.⁷⁷ In particular, codes of practice in the field of AI in the Union level will soon be published by the AI Office and the AI Board (or the respective office and authorities set out in according with the AI Act to govern this technology within EU).⁷⁸

There were many discussions about GenAI models and tools powered by this technology, since it was not mentioned in the AI Act previous draft. Concerns were raised, saying the draft published in 2019 lacked a mechanism to govern GenAI chatbots proportionately. There was no answer on what category will those chatbots and other GenAI applications will fall under the governance in the AI Act. If it is considered as “general-purpose use of AI systems”, with no control or obligations set out from the law during their operations, there are big risks related to data privacy and copyright violations. On the other hand, if the legislators considered these platforms to comply with the standards for high-risk AI systems, this will lead to the situation of overregulation.⁷⁹ In the latest version of the AI Act, this ambiguous point has been resolved, with an overview on the description of the ability of GenAI and how it should be classified in this legal act as follows:

Large generative AI models are a typical example for a general-purpose AI model, given that they allow for flexible generation of content (such as in the form of text, audio, images or video) that can readily accommodate a wide range of distinctive tasks... The development and training of such models require access to vast amounts of text, images, videos, and other data... and [such content] is protected by copyright and related rights.⁸⁰

With this indication, AI Act has recognised the significant role of GenAI, and governance towards such models and tools is in need. Compared to the prevailing legal regulations in China and the US (as described in the following parts), EU legislators have taken a step further, trying to integrate the IP law elements in the legal governance of AI. However, the focus of this element is only about the use of copyrighted materials in GenAI models training database rather than finding the answer for copyright protection to AI-generated

⁷⁶ See more in *ibid*, Title II (for prohibited systems), Title III (for high-risk systems), and Title VIIIa (for GPAI systems).

⁷⁷ *High-level summary of the AI Act*, EU Artificial Intelligence Act, 27 February 2024, <https://artificialintelligenceact.eu/high-level-summary/>, retrieved on 20 March 2024.

⁷⁸ *Ibid*, footnote no. 71, Article 52(e).

⁷⁹ N. Helberger and N. Diakopoulos, *ChatGPT and the AI Act*, Internet Policy Review, Vol. 12, Issue 1, 16 February 2023, <https://policyreview.info/essay/chatgpt-and-ai-act>, retrieved on 20 March 2024.

⁸⁰ *Ibid*, footnote no. 71, Recitals 60(c) and 60(i) AI Act.

works. Despite the lack of clarity in this matter, when coming to effect, as aforementioned, the legal definition of AI within the AI Act will be one of the crucial keys to answer how EU legislators would govern the relationship between AI-generated works, including images, with copyright protection.

2.3.2 The United States

As described by an article in *ZDNet*, AI is a new weapon in the 21st century for countries to strengthen their position at the global level, and “*the global AI arms race has been underway for years*”. In this race, the ultimate leader has always been the US.⁸¹ However, coming to the legislative perspective, the US has not pursued a strict approach towards the governance for AI.

Until now, the approach of the US law can be characterised by “non-binding principles or voluntary guidance on risk management towards AI”.⁸² For the legislation part, it is now built on the existing framework, with AI-related provisions within each sector, rather than a specific legal act for AI in the federal level. In the states level, there have been significant actions to create a comprehensive set of legal provisions to govern AI, heading towards the creation of “*reliable, robust and trustworthy AI systems*”. There are now at least 25 states, with the territory of Puerto Rico and the District of Columbia that introduced laws related to AI, and 18 states, with Puerto Rico, adopted resolutions or enacted such legislation. The legal documents that are linked to AI also vary in different topics, for both government and private sectors.⁸³

At the federal level, there has not been much aggressive action from the US Congress or the administration of President Joe Biden (or the former Donald Trump) when it comes to AI. The White House, besides *the Blueprint for an AI Bill of Rights*, also published Executive Orders to establish principles for the use of AI by federal agencies, with the public trusts therein. Biden admin-

⁸¹ S. Ortiz, *AI arms race: This global index ranks which nations dominate AI development*, *ZDNet*, 28 June 2023, <https://www.zdnet.com/article/ai-arms-race-this-global-index-ranks-which-nations-are-dominating-ai-development/>, retrieved on 24 March 2024.

⁸² One of the examples for such documents is the *Blueprint for an AI Bill of Rights*, published by the White House Office of Science and Technology Policy. This document listed the principles on the use of AI automated systems. These principles can provide guidance for the operation of such systems, aiming to align with human rights, specifically related to data privacy and to preserve democracy in the US. See more about this document in *Blueprint for an AI Bill of Rights – Making Automated Systems Work for the American People*, The White House, <https://www.whitehouse.gov/ostp/ai-bill-of-rights/>, retrieved on 24 March 2024.

⁸³ The US legal documents in the states level concern different fields such as healthcare or labour, on different perspectives (on responsible use or the impact assessment on the policymakers). See *Artificial Intelligence 2023 Legislation*, National Conference of State Legislatures, 12 January 2024, <https://www.ncsl.org/technology-and-communication/artificial-intelligence-2023-legislation>, retrieved on 25 March 2024.

istration also set up the Office of Management and Budget for federal agencies on AI regulation.⁸⁴ However, the US Congress has not yet passed legislation concerning AI regulation although draft acts on the field of data protection or algorithm accountability have been introduced on the idea to address risks associated with AI systems.⁸⁵

In March 2024, the current US President, Joe Biden urged the Congress, during his time in the first presidency to pass national legislation to regulate AI, tackling the potential risks that this technology could bring to the society.⁸⁶ This statement can also be supported by an Executive Order issued by his administration in October 2023. This document also went in line with the *AI Bill of Rights* which was released earlier in 2022, to set up new standards for the governance of AI. With this line of legal documents, the US administration aims that AI systems will be developed in a safe, trustworthy manner. For the users of AI systems, safety will be illustrated from the perspectives of data privacy, advancing towards equity and protecting civil rights, for example the rights of consumers and workers. At the same time, the US policy-makers would like to facilitate a pro-competitive and pro-innovation market for AI systems operators. This direction indicted in this order would ultimately aim to ascertain the global leader position in the AI field for the US.⁸⁷

To determine what types of AI tools (or systems) are targeted to fall within the scope of governance as the intention of the Biden administrations, some of the terms are defined in this order for a reference as follows:⁸⁸

“*artificial intelligence*” or “*AI*” [is] a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. [AI] systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner;

⁸⁴ See *Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*, The White House, 30 October 2023, <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>, retrieved on 25 March 2024. See the *Blueprint for an AI Bill of Rights* at *ibid*, footnote no. 82.

⁸⁵ See *H.R.6580 - Algorithmic Accountability Act of 2022*, CONGRESS.GOV, 03 February 2022, <https://www.congress.gov/bill/117th-congress/house-bill/6580/text>, retrieved on 20 May 2024.

⁸⁶ *Ibid*, footnote no. 64.

⁸⁷ See more in *Fact Sheet: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence*, The White House, 30 October 2023, <https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/>, retrieved on 25 March 2024.

⁸⁸ See *ibid*, footnote no. 84, Sections 3(b), (c), (e), (p).

and use model inference to formulate options for information or action.

“*AI model*” means a component of an information system that implements AI technology and uses computational, statistical, or machine-learning techniques to produce outputs from [given inputs].

“*generative AI*” means [AI models] that emulate the structure and characteristics of input data in order to generate derived synthetic content [including images, videos, audio, text, and other digital content].

“*AI system*” means any data system, software, hardware, application, tool, or utility that operates... using AI.

The intention of the Biden administration on the policies and principles to develop AI technology also includes the interests towards IP law. When investing in the development and research of AI, the US government shall also solve the issues arising that would link to the IP law, to protect the inventors and the creators of protected works. The US authorities in the IP field, like the United States Patent and Trademark Office and the United States Intellectual Property Rights Coordination Centre, along with others, would cooperate to publish guidelines on the assessment to grant patents for inventions towards the involvement of AI systems, or algorithms within this field, which is now seen as a novelty factor. Not just that, one of the authorities’ goals is also to assist the AI tools operators to tackle AI-related issues. A training, analysis, and evaluation program to mitigate AI-related IP risks will also be conducted to achieve such goals. Specifically for copyright matters, it is the US Copyright Office (“USCO”) to give out the recommendations, based on its research, on the matters for the link between AI and copyright law. Such recommendations can propose the answer on two perspectives that are in the hot debate as (1) the possibility of copyright protection towards AI-generated works (or the scope of such protection, if affirmative) and (2) how the US copyright law regime would deal with the use of copyrighted materials in the training data of the AI tools.⁸⁹ For now, the USCO and the US law have not indicated any concrete answer for such questions in the written law, however, there have been caselaw, guidance and the decisions from USCO in the recent years to assess the possibility of copyright protection for images generated through GenAI tools. These stories will show us the intention of US legislators’ on how to deal with this matter, which will be demonstrated more thoroughly in the following part of this thesis.⁹⁰

⁸⁹ See *ibid*, Section 5.2 for specific mentions on copyright matters.

⁹⁰ See Part 4.1, *The United States* for the US caselaw regarding this legal discussion.

2.3.3 China

For China, AI has been promoted early. This technology is seen as “a sharp weapon to hold sway over the world” in geopolitics. In 2017, the government and the State Council of China began to make development plans for AI, with targets to achieve every five years. It is expected that China would become the major AI innovation centre in the world next year (2025). By 2030, AI in China would be developed extensively in the manufacturing, governance and national defence sectors.⁹¹ To facilitate such development, significant investments have been made to “*compete against other competitors*”, like the US or even the EU. To illustrate the effectiveness of AI policies in China, a report from the US National Security Commission on AI (NSCAI) raised a concern on the high-speed development in the field of AI in this country. “*America’s technological predominance, the backbone of this country economic and military power is under threat*” for the first time since the Second World War.⁹²

However, significant investments within AI do not guarantee the leading position in this field, neither do the sustainable development of this technology. That is why, it is necessary to adopt legislation to govern AI in the national level. Unlike the intention of EU legislators, for now, there has not been any specific piece of legislation about AI technology in China. The Chinese national law approach towards AI would involve several organisations publishing relevant documents in different sectors like security or consumer protection, which is somehow similar to the US approach.⁹³ There are also voluntary principles and guidance on ethics matters on the use of AI, acting as soft law instruments. On the other side, the Cyberspace Administration of China (“CAC”) already released hard law measures in AI field. These measures do not concern about AI in general, but focusing on specific AI types, including algorithm recommendation systems and deep synthesis (or synthetically generated content).⁹⁴ The latest notable piece of legislation in the AI field concerns GenAI, called GenAI Regulation. The aforementioned documents are

⁹¹ See more details about this development plan in G. Webster, R. Creemers, E. Kania and P. Triolo, *Full Translation: China’s “New Generation Artificial Intelligence Development Plan” (2017)*, DigiChina – Stanford University, 1 August 2017, <https://digi-china.stanford.edu/work/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>, retrieved on 12 March 2024.

⁹² *China’s ambitions in artificial intelligence*, European Parliament, 2021, [https://www.europarl.europa.eu/Reg-Data/etudes/ATAG/2021/696206/EPRS_ATA\(2021\)696206_EN.pdf](https://www.europarl.europa.eu/Reg-Data/etudes/ATAG/2021/696206/EPRS_ATA(2021)696206_EN.pdf), retrieved on 11 March 2024.

⁹³ See Article 62(2), China Personal Information Protection Law 2021, translated by R. Creemers and G. Webster, *Translation: Personal Information Protection Law of the People’s Republic of China – Effective Nov. 1, 2021*, DigiChina – Stanford University, 7 September 2021, <https://digichina.stanford.edu/work/translation-personal-information-protection-law-of-the-peoples-republic-of-china-effective-nov-1-2021/>, retrieved on 12 March 2024. This article explicitly states there must be rules and standards to protect personal information when handling such information to AI technology services.

⁹⁴ L. Saouma and Others, *A Comparative Framework for AI Regulatory Policy*, The Montreal International Centre of Expertise in Artificial Intelligence (CEIMIA), February

considered “*the three most concrete and impactful regulations on algorithms and AI*” in China, with information control as the central governance goal.⁹⁵

For the GenAI Regulation, it is aiming at “*models and related technologies that have the ability to generate texts, pictures, sounds, videos, and other contents*”. Although the regulation does not indicate any clear situation on the use of GenAI, or describe any example of this technology, it is understood that “any content-generating technology” would fall under the scope of this Regulation. The operation of such tools would be strictly monitored by Chinese government. To be more specific, the Regulation imposes obligations mainly towards (i) *GenAI service providers* (who, for example would provide GenAI services through the “business-to-consumer”, commonly known “B2C” channels). Other entities are also governed, as (ii) the *technical supporters*. Prime examples for this entity are *OpenAI* and *Google* with their own GenAI model. There are also (iii) the *online application distributors*, commonly known as “application markets” (*Apple App Store*, *Google Play*), or specific application markets from other mobile manufacturers (like *Samsung Galaxy Store* or *Xiaomi Mi GetApps*) and (iv) the *users of such GenAI platforms* to “produce, copy, publish, and disseminate information” are subject to this Regulation. For example, the algorithms of GenAI tools must be registered to CAC and their local counterparts (likely seen as a mandatory condition before the launching of such tools); or the security assessments towards the applications or products that are GenAI-integrated. For the application distributors, they need to conduct a proper procedure to verify the applications that use GenAI. During the operation of the GenAI platforms, they must comply with the laws regarding data security and the protection of personal information, competition law, or regulations to control the users of the platform. Furthermore, AI-powered products, including GenAI, when optimizing its training data, or labelling such data must ensure the use of lawful information and other rules specified in GenAI Regulation. Finally, the data using within GenAI tools will subject to the inspection and supervision of Chinese authorities for the compliance with the laws.

With the comprehensive laws and regulations adopted, we can see the clear ambition that Chinese government and legislators are having to build a legal mechanism for AI that “*respect social morality and ethics, adhere to the correct political direction, public opinion and promote positive and upright value*”.⁹⁶ For now, there has not been much discussion at the codified level

2023, <https://ceimia.org/wp-content/uploads/2023/05/a-comparative-framework-for-ai-regulatory-policy.pdf>, retrieved on 12 March 2024.

⁹⁵ M. Sheehan, *China’s AI Regulations and How They Get Made*, Carnegie Endowment for International Peace, 10 July 2023, <https://carnegieendowment.org/2023/07/10/china-s-ai-regulations-and-how-they-get-made-pub-90117>, retrieved on 12 March 2024.

⁹⁶ See more about the Chinese law provisions in the field of AI in *China’s New AI Regulations*, Latham & Watkins Client Alert Commentary, 16 August 2023,

for the protection of AI-generated works in the perspective of copyright law. However, A. Zhang, a professor at the University of Hong Kong had the optimism about this matter in the near future, having said to expect more guidelines and decisions from the national courts to clarify copyright policy towards AI. With the current policy, “*it is unlikely for the Chinese administrative agencies to take an aggressive stance to AI-related infringements*” and there would be “a business-friendly approach” in the decision of IP cases.⁹⁷

2.3.4 Sub-conclusion

The former paragraphs have illustrated the eager attitude of the legislators around the world to govern AI and its applications (including GenAI) through legislation. There have also been attempts to harmonise this legal field on the international level.⁹⁸ With this trend, the legal framework towards AI will become more comprehensive overtime. However, to achieve a unified framework towards the field that has changed and developed with an unprecedented speed like AI will not be an easy task. In my opinion, I do not see this type of international agreement will be settled in the near future.

For now, we have not seen the legislators emphasised much in the copyright law perspective when defining AI (or GenAI) terms, despite going in line on the definition of those terms. If they decided to further analyse those concepts, they would focus more on the issue of the GenAI platforms using the copyrighted materials rather than going to the assessment of copyright protection for AI-generated works. Such definitions have not helped to clarify whether AI can be seen as the main contributor to the creative works protected under the copyright law. For now, legislators cannot rely on the definitions of AI to answer the status of works on copyright protection, with AI being the creator of such work, as equivalent to a human author. Personally, I think that it would be impossible to grant the copyright protection on that stance. However, to answer the legal matters within the Union, such answers must be in line with the general principles of EU law, including legal certainty and the

<https://www.lw.com/admin/upload/SiteAttachments/Chinas-New-AI-Regulations.pdf>, retrieved on 13 March 2024.

⁹⁷ Z. Yang, *Four things to know about China's new AI rules in 2024*, MIT Technology Review, 17 January 2024, <https://www.technologyreview.com/2024/01/17/1086704/china-ai-regulation-changes-2024/>, retrieved on 15 March 2024.

⁹⁸ In 2023, the Group of Seven (G7) held a summit in Japan and later adopted the first documents, introducing the first international harmonised regulations and standards in the field of AI. See *Hiroshima Process International Guiding Principles for Organizations Developing Advanced AI Systems*, G7, 2023, <https://www.mofa.go.jp/files/100573471.pdf>, retrieved on 21 March 2024 and *Hiroshima Process International Code of Conduct for Organizations Developing Advanced AI Systems*, G7, 2023, <https://www.mofa.go.jp/files/100573473.pdf>, retrieved on 21 March 2024. The EU has also worked towards this idea. See also *Commission welcomes political agreement on Artificial Intelligence Act*, European Commission, 9 December 2023, https://ec.europa.eu/commission/presscorner/detail/EN/ip_23_6473, retrieved on 21 March 2024.

doctrine of legitimate expectations.⁹⁹ The legislators should think about the possibility to announce a clear indication (either in legal documents, or through caselaw) to answer the capacity of copyright protection for AI-generated works, instead of doing a case-by-case assessment, based on the types of works, or the AI (or GenAI) tools that have been used to create such works. If they went with that route of assessment, it would make the situation become complicated, and worse, controversial.

However, with the former arguments, it does not mean that there will be no assessment possible to be conducted on copyright protection for AI-generated images. In the following part of this thesis, we will see how other jurisdictions, with caselaw from the courts and the decision from the authorities in the US and China are dealing with this matter. In short, from the legislators' view, the most crucial aspect to conclude the relationship between AI-generated images and copyright protection is about the "*originality*", on whether there is *human authorship* constituted in such works.

⁹⁹ For the in-depth analysis of "*legal certainty*" and "*legitimate expectation*" as a general principle of EU law, see for example Chapter 5, T. Tridimas, *The General Principles of EU Law (2nd edition)*, Oxford EC Law Library, 2007.

3 Overview of the EU copyright law

With the foundation of the EU, the MS would work together to establish the “*internal market*” that facilitate the free movement of goods, persons, services and capital.¹⁰⁰ This concept aims to abolish any barrier between the MS when doing business within the Union, where role of IP is also pivotal.¹⁰¹ With a proper legal and policy framework, the entities could safeguard their rights and could have a mechanism to protect their trademarks, patent and copyright towards works. For copyright, it is one of the branches of IP, aiming to protect the rights of the authors, creators, and their works by granting rights attributed to such works.¹⁰² However, the ultimate goal of this set of rights in copyright law is “*to find a balance between opposing interests*”.¹⁰³ To be specific, the balance of interests would be considered in the view of different parties, with different types of benefits. Such parties are the creators (or the authors); the consumers (or the users); the intermediaries and the platforms that would create, own, provide or consume such works.¹⁰⁴

Copyright is divided into two principal set of rights, as *economic rights*, dealing with how the rightholders earn benefits with the use of the protected works, how to lawfully authorise, or prohibit to make copies or distribute such copies or the communication to the public.¹⁰⁵ The other set of rights, which is the main focus of this thesis, is *moral rights*. Unlike *economic rights*, the *moral rights* are generally non-transferrable and would deal with matters related to the authorship of copyrighted works or how the authors would protect their honour or reputation when distributing their works.

In the Union, the most notable feature when discussing this distinction between these sets of rights is how they are integrated into EU law. Until now, EU institutions have adopted many different legal documents to harmonise copyright law, particularly with respect to *economic rights*. On the other hand, the protection towards *moral rights* may vary from on MS to another, due to the fact this set of rights are not harmonised at the EU level.¹⁰⁶ Throughout

¹⁰⁰ The legal bases to set up this unique concept of the EU can be seen in Articles 3(3) The Treaty on the European Union (TEU) and 26(2) The Treaty on the Functioning of the EU (TFEU).

¹⁰¹ It is recognised in Article 17(2) CFR that “IPR shall be protected”; in analogy, copyright protection is mutually agreed as one of the fundamental rights in EU law.

¹⁰² *EU Copyright*, EUR-Lex, <https://eur-lex.europa.eu/EN/legal-content/glossary/eu-copyright.html>, retrieved on 29 April 2024.

¹⁰³ G. H. Pike, *An Update on Orphan Works*, Information Today, Vol. 24, Issue 7, 2007, <https://ssrn.com/abstract=1408209>, retrieved on 30 April 2024.

¹⁰⁴ A. Lukoseviciene, *Copyright I: Object, Requirements, Consequences*, Lecture on 17 April 2023, Lund University.

¹⁰⁵ *Ibid*, footnote no. 102.

¹⁰⁶ *Your Guide to IP in Europe*, European IP Helpdesk, 2019, https://intellectual-property-helpdesk.ec.europa.eu/document/download/b4b56f73-75e7-422d-a276-c99f0f2c4f4d_en?filename=european-ipr-helpdesk-your-guide-to-ip-in-europe.pdf, retrieved on 29 April 2024, p. 35.

the time, EU institutions have achieved significant leap in the harmonisation in the field of copyright law, with the results of *InfoSoc Directive*,¹⁰⁷ *DSM Directive*¹⁰⁸ or other related documents in regards of the duration of the copyright protection, or the protection mechanism applied to specific type of works like computer programs or databases. Furthermore, there have also adopted regulations to ensure to the cross-border service provision between MS or between MS and third countries (countries that are not MS) with articles that may concern (or connect) to copyright law. Despite having remarkable efforts on the law harmonization in this field, when evaluating on the topic of copyright law, some scholars have commented that this harmonisation process “*has been slow and cautious*”.¹⁰⁹ Since copyright law has not been fully harmonised, there are still issues remain that need to be discussed for the uniform legal solutions at the EU level. To provide such solutions, apart from the framework proposed by the EU institutions, the role of CJEU through the case law from the preliminary ruling proceedings would also be very crucial in consideration.¹¹⁰

There are many perspectives to analyse when it comes to the copyright law regime in the EU. However, for the sake of the research questions in this thesis, I would like to (1) put the emphasis on *the conditions that need to be satisfied for a work to earn copyright protection*. From this foundation, it would be very helpful in the later stage of this thesis, to see if it is possible for the EU legislators (and courts) to answer the unsolved relationship between AI-generated images and copyright law. This thesis also would like to discuss to some extent the criteria that could directly link to the ultimate result of the copyrightability of AI-generated images, as (2) how to *determine the originality* of a copyrightable work and (3) *who could be the author* under the EU copyright law regime.

3.1 The basic conditions for copyright protection

The basic requirements to earn the protection in the current EU copyright law would be (1) *the territorial connection to the EU* and (2) the existence of *protectable subject matter*. To become protectable, the works must be created in some of the following examples:¹¹¹

¹⁰⁷ See Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society amended by Directive (EU) 2017/1564 of 13 September 2017 and Directive (EU) 2019/790 of 17 April 2019.

¹⁰⁸ See Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC.

¹⁰⁹ A. Kur, T. Drier, S. Luginbühl, *European Intellectual Property Law (2nd edition)*, Edward Elgar Publishing, 2019, p. 55.

¹¹⁰ *Ibid*, footnote no. 16, p. 19.

¹¹¹ *Ibid*, footnote no. 104.

- Created within the territory of the MS or the Contracting States of the international treaties or conventions where EU and the MS are also the Contracting States to such documents (for example the Berne Convention¹¹² or TRIPS Agreement).
- Created by the citizens, or the permanent residents of the aforementioned states.
- Created by third nationals, however, in the time of copyright infringement to such works, the creators have become the citizens, or the permanent residents of the aforementioned states.

The second condition, under a more complicated assessment, is that the work is a protectable subject matter. One of the most notable features that distinct copyright law from all the other legal sectors is the efforts to achieve international harmonisation. As illustrated, EU is the Contracting States of many international instruments, which is the same story China and the US, the third countries concerned in this thesis. For that reason, there would be some basic concepts in copyright law that are defined similarly. CJEU, when solving cases concerning copyright would view those documents as “*the starting point for its interpretation of all statutory instruments in the copyright and related field*”.¹¹³ Berne Convention has already introduced a non-exhaustive list of works, whatever may be the mode or form of its expression, to subject to the protection of copyright law regime. They would be varied, from written materials (books, lectures, novels or newspapers) to artistic works (photographs, paintings or sculptures).¹¹⁴ Furthermore, EU has accepted the copyrightability of computer programs and databases, as literary works within the meaning of the Berne Convention.¹¹⁵ Evaluating from this point, it is implied that this international convention already hinted that merely idea would not be copyrightable, since such protection only covers works “*in expression form*”.¹¹⁶ Looking at other instrument, TRIPS Agreement and WCT also recognised “*copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts*”.¹¹⁷

¹¹² Berne Convention for the Protection of Literary and Artistic Works (Paris Act) of 24 July 1971, as amended on 28 September 1979 (“**Berne Convention**”).

¹¹³ J. Pila and P. Torremans, *European Intellectual Property Law (2nd edition)*, Oxford University Press, 2019, p. 225.

¹¹⁴ See Article 2(1) Berne Convention and *ibid*, footnote no. 106, p. 33.

¹¹⁵ See for example Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs and Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

¹¹⁶ See E. Rosati, *Copyright at the CJEU: Back to the start (of copyright protection)* in H. Boshier, E. Rosati (eds), *Developments and Directions in Intellectual Property Law - 20 Years of The IPKat*, Oxford University Press, 2023.

¹¹⁷ See Article 9(2) TRIPS Agreement. See also Article 2 WIPO Copyright Treaty 1996 (“**WCT**”).

3.2 Authorship in EU copyright law

The previous paragraphs have illustrated a brief description on the foundational criteria for a work to be eligible for copyright protection. However, the idea of copyright is unlike any other legal field; it does not only protect the economic benefits attached to the creations, but also matters about the authorship of those works. The first matter is about the human authorship requirement to earn copyright protection. Described in the later section of this thesis, the US courts and authority that is responsible for copyright law (USCO) claimed human authorship as one of the must-have criteria for copyright protection. From this foundation, they rejected the copyrightability of AI-generated images, since they did not see any human authorship included in such works.¹¹⁸ However, this is not the case in EU copyright law. As aforementioned, the harmonisation of EU copyright is not a complete process, and one of the perspectives that is in such non-harmonisation status is *the definition of "author"*. Since it is not harmonised, the MS has the full competent to decide how the term should be understood in their national law.¹¹⁹ Through the development of this legal field, there have been many occasions where EU law identifies a clear answer to this matter, indicating the authors as "*natural person or group of natural persons*"; "*legal persons under national copyright law*" or even the *employees*, as the creator in specific cases.¹²⁰ However, there has not been any indication from the EU official document, or any case law from the EU courts to exclude the possibility of protection for non-human entities to become the author of copyrighted works. With the scenarios of AI involving in this legal field, it is essential for the EU legislators to think about a clear answer to this matter. This would be really helpful and would facilitate the assessment of copyright protection for such works, which appears to be more popular in the near future.

Going deeper into this topic, according CJEU caselaw, to earn the authorship for a work under the EU copyright law regime, two specific criteria that need to be examined in cumulative. Firstly, "*the work must be an expression of the author's own intellectual creation*". Explaining more about this argument, it also means that the work in consideration shall be identifiable with sufficient precision and objectivity, but that expression is not necessarily in the permanent form.¹²¹ Such expression can be shown through the final results of the creative process like the paintings, illustrations, photographs or books,... In more exceptional cases, CJEU already accepted the possibility for copyright

¹¹⁸ See the detail assessment in Part 4.1, *The United States*, respectively in cases like *Zarya of the Dawn* and *Stephen Thaler v. Shira Perlmutter, et al.*

¹¹⁹ For example, Article 1, Chapter 1 of the Swedish Copyright Act defined the author is "the actual creator of the work". See more about the regulations in copyright law at MS in *Copyright Law in the EU: Salient features of copyright law across the EU Member States*, European Parliamentary Research Service, June 2018, [https://www.europarl.europa.eu/RegData/etudes/STUD/2018/625126/EPRS_STU\(2018\)625126_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2018/625126/EPRS_STU(2018)625126_EN.pdf), retrieved on 1 May 2024.

¹²⁰ *Ibid*, footnote no. 113, pp. 272 - 274.

¹²¹ Case C-310/17, *Levola Hengelo BV v. Smilde Foods BV*, CJEU, 13 November 2018.

protection towards the bicycle, since “*it is identifiable with sufficient precision and objectivity*” and combining with the other criteria, it would satisfy the copyright protection test if the bicycle also goes through originality test.¹²² On the contrary, since food taste is a subjective and variable subject-matter depending on the product concerned, with different factors like age, food preferences and consumption habits, as well as the environment or the context in which the product is consumed, it cannot be identified with “*precision and objectivity*”, therefore non-copyrightable.¹²³

3.3 Originality in EU copyright law

The second criteria to earn the authorship of a work under EU copyright law, is the originality test. To illustrate the essential of this criterion in the assessment of copyright protection, “only works that show some minimum amount [of originality]” would attract this protection regime”. However, in the international landscape, this criterion is also lack of a statutory definition.¹²⁴ According to scholars, this criterion is classified in two different aspects – subjective (more focusing on the intention of the authors) and objective originality (emphasising on the types of works in the assessment).¹²⁵ For the EU law, it did not until recently that the legislators, or more specifically CJEU, have taken significant steps to find the uniform answer to assess this criteria when dealing with copyright law cases. The signature cases of CJEU in this discussion would be *Infopaq* and *Painer*.¹²⁶ In a simple explanation, *originality* means a work “originates from the author” and “satisfies the minimum requirement of creativity (or effort)” of the author to such work, with the author’s independent creation.¹²⁷ However, the wording of CJEU has defined this criterion in a more comprehensive way, beginning from *Infopaq*.¹²⁸

¹²² Case C-833/18, *SI, Brompton Bicycle Ltd v. Chedech/Get2Get*, CJEU, 11 June 2020. This case concerned about a bike which had an expired patent. However, the Applicant brought an action to the national court for a copyright infringement against its competitors, with another similar bike product which is claimed to be depicted in design.

¹²³ See *ibid*, footnote no. 121. In this case, CJEU reject the possibility the taste of food to fall under the scope of EU copyright law, to seek for protection.

¹²⁴ T. Margoni, *The Harmonisation of EU Copyright Law: The Originality Standard*, 29 June 2016, <https://dx.doi.org/10.2139/ssrn.2802327>, retrieved on 1 May 2024.

¹²⁵ M. Jovanovic, *The originality requirement in EU and US, different approaches and implementation in practice*, European Communities Trademark Association (ECTA), <https://ecta.org/ECTA/documents/MinaJovanovic3rdStudentAward202012149.pdf>, retrieved on 23 April 2024.

¹²⁶ See Case C-5/08, *Infopaq International A/S v. Danske Dagblades Forening*, CJEU 16 July 2009 and Case C-145/10, *Eva-Maria Painer v. Standard Verlags GmbH and Others*, CJEU, 1 December 2011.

¹²⁷ *Ibid*, footnote no. 104. See also *Copyrightability - Copyright Basics*, Research Guides at University of Michigan, <https://guides.lib.umich.edu/copyrightbasics/copyrightability>, retrieved on 17 May 2024 for the definition of this criterion in the view of US law.

¹²⁸ *Ibid*, footnote no. 126 (*Infopaq*), para. 37.

... copyright... is liable to apply only in relation to a subject-matter which is original in the sense that *it is its author's own intellectual creation*.

With this perception, CJEU concluded the part of the work in dispute to pass the test of originality, and thus protectable in copyright law. Later, this concept was elaborated in *Painer*, concerning the copyrightability of a photograph. The beginning of this assessment resembled *Infopaq* about the foundation of originality test. To prove the intellectual creation of the author in a photo, CJEU explained the creator (as the photographer), during the creation of this work, could make “*free and creative choices at various points*”. The choices are described thoroughly, for example the background of the photo, the pose of the subject, the lighting, the angle or the view; even the use of computer software that could affect the results of the photos, would also fall into the consideration of the originality test.¹²⁹ Contrary to such circumstances, in *Premier League*, CJEU held that sporting events as the football games “*cannot be regarded as intellectual creations*” as works within the meaning of EU copyright law. The reason for such rejection lies within the nature of the subject-matter. More specifically, football matches (or sporting events in general) “*are subject to the rules of the games, leaving no room for creative freedom*”.¹³⁰ Since such events do not satisfy the conditions of the originality test, they are not copyright-protected.

Throughout the assessment for copyright protection, the EU courts have emphasised the role of author's creation. EU copyright law would view the author “*intellectual creation*”, with “*free and creative choices*” to prove the originality of their works, and ultimately earn the copyright protection. As illustrated in the later part of this thesis, originality is the key criteria to determine the copyright for AI-generated images, with prompts as the human contribution according to other jurisdictions concerning this legal discussion. The next part of this thesis will go into the analysis on how this legal matter is being resolved in the US and China - before looking for such answer in the view of EU law.

¹²⁹ *Ibid*, footnote no. 126 (*Painer*), paras. 90 - 94.

¹³⁰ See Joined Cases C-403/08 and C-429/08, *Football Association Premier League and Others*, CJEU, 4 October 2011, paras. 97 - 99.

4 Copyright protection towards AI-generated images outside the EU

With the development of GenAI, the fact that such tools are becoming increasingly popular has contributed to the rising of legal discussions related to this technology. Such discussions also involve the answer on how to apply the copyright protection regime towards AI-generated artworks created by *Midjourney*, *ChatGPT* or other similar platforms. This thesis would like to focus on the legal systems of (1) the US and (2) China in this discussion. The reasons for this choice can be listed, as (i) those countries are the pioneers in AI technology, (ii) they all have a comprehensive legal framework towards IP law and most importantly (iii) the US and China are some of the first countries that are eager towards solving the legal relationship between AI-generated images and copyright protection.

4.1 The United States

In the US, the first notable event that brought out the discussion of copyright protection towards AI-generated works, or more specifically, images arose in 2023, is the saga of *Zarya of the Dawn*. The USCO decision on this case is one of the first legal documents in the world indicated the answer for the possibility of copyright protection to AI-generated works. Later, in August, the District of Columbia District Court published the federal court's first-of-its-kind ruling on this matter, through the complaint of Stephen Thaler.¹³¹ The details of such cases will be illustrated in the following parts, to have a more in-depth view into the research questions of this thesis.

4.1.1 “*Zarya of the Dawn*”

As mentioned earlier, *Zarya of the Dawn*, for now, resulted in a formal decision made by the USCO. Before diving into the details of this story, we shall see the role of USCO, the specialised authority in the US law dealing with copyright law matters.

4.1.1.1 *USCO overview and its role in the US copyright law regime*

Compared to the EU copyright law, USCO is a unique concept. Normally, a work will be eligible for copyright protection automatically at the moment “*it is created and fixed in a tangible form that it is perceptible either directly or with the aid of a machine or device*”. Following this idea, unlike the field of trademark or patent law, there is no need for any registration procedure for the copyrighted works to earn the protection under this legal regime. However, with the explanation of the USCO, the registration procedure, despite

¹³¹ I. Poritz, *AI Art Copyright Ruling Invites Future Battles Over Human Inputs*, Bloomberg Law, 24 August 2023, <https://news.bloomberglaw.com/ip-law/ai-art-copyright-ruling-invites-future-battles-over-human-inputs>, retrieved on 27 March 2024.

not obligatory, will be beneficial for the author and the rightholder of such works. More specifically, the information of the author and the copyright holder of the work will be clearly identified in the public record of USCO. In addition, a certificate of registration will be issued to prove such rights. The legitimate recognition of the copyright holder from USCO is not the only important aspect for this registration mechanism. Since the work under the protection of the US copyright law is approved by the formal procedure set out by USCO, under any dispute related to the protected work, the owner of the work (or the author) may be eligible for statutory damages and attorney's fees in successful litigation. For the assessment of the copyright status of the work, due to the fact that it is successfully registered in USCO, such registration will be considered as prima facie evidence in front of the US courts. Due to those reasons, the registration procedure is recommended by this authority to earn better protection for copyrighted works.¹³²

The role of USCO is not only limited to recording and giving copyright registration certificates, but also lies within specific tasks. Those would include administrative matters related to copyright law and giving expert advice on this legal field and related policies “*for the benefit of all*”. Such tasks will not only help the authors and rightholders to protect their works; there are other subjects that can earn benefits from the tasks of this authority. For example, to help the US lawmakers, USCO will assist them reviewing of the hearings of the courts or preparing substantive reports.¹³³ Notably, it does not have the judicial power like the courts to have the competence to solve the dispute between parties or impose penalties towards violation of copyright law.

During operation, USCO has also published a document called *The Compendium of USCO Practices*, to provide in-depth information on how this authority works, as a guidance for other entities. Although it is not a binding legal act like *The Copyright Act* (a legal document enacted by the US Congress), the Compendium still has an important contribution towards the US copyright law regime, particularly in the *Zarya of the Dawn* saga. We must also take notice that even though they are two different documents, there are resemblances and compatibilities in the content of the Compendium and the Act. For USCO, when assessing copyright law issues (like the *Zarya of the Dawn* case), this authority still needs to take actions in compliance with *The Copyright Act*. On the other way, despite not having the force and effect of law, the US courts are allowed, and have already cited the *Compendium of the USCO* in numerous copyright cases, as a source for law interpretation.¹³⁴

¹³² *Copyright in General (FAQ)*, The United States Copyright Office, <https://www.copyright.gov/help/faq/faq-general.html>, retrieved on 27 March 2024.

¹³³ *Overview of the Copyright Office*, The United States Copyright Office, <https://www.copyright.gov/about/>, retrieved on 27 March 2024.

¹³⁴ See Introduction, *Compendium of USCO Practices (3rd edition)*, United States Copyright Office, 2021, <https://www.copyright.gov/comp3/docs/compendium.pdf>, retrieved on 28 March 2024.

4.1.1.2 Background story of “Zarya of the Dawn” and USCO action

We can trace back to September 2022 for the beginning of *Zarya of the Dawn* saga. At that time, Kristina Kashtanova decided to file an application to USCO to register for a certification of copyright protection for her work, a short comic book titled “*Zarya of the Dawn*”. Later, such application was accepted. After her successful attempt, Kashtanova decided to announce that milestone, publishing a post on social media admitting her work was created by GenAI, specifically *Midjourney* AI tool. Talking about the registration application to USCO, Kristina said that she “tried to make a case that we do own copyright when we make something using AI”. Her approach to this successful attempt is that the artworks in the comic book were *AI-assisted and not fully created by AI*.¹³⁵ After that information went viral, USCO took notable actions and decided to cancel the copyright protection application for the case of *Zarya of the Dawn*.

4.1.1.3 The response from Ms. Kashtanova

Kashtanova and her legal team, represented by Van Lindberg, after receiving the cancellation decision from the USCO, sent a response to appeal that decision.¹³⁶ In this response, Van Lindberg first had a short summary on the cancellation decision from the USCO towards the application submitted by Kashtanova. In their understanding, the USCO rejected the copyright protection towards *Zarya of the Dawn* on the basis that “*the information in [her] application was incorrect, or, at a minimum, substantively incomplete*”. Particularly, such rejection is due to her use of *Midjourney* to create the artworks in the comic books. The use of this GenAI tool indicated that such artworks lack the human authorship, and Kashtanova, in her claim for the copyright protection towards her comic book, had not excluded the elements that do not contain human authorship.¹³⁷

To counterclaim the USCO decision, Van Lindberg and Kashtanova told their story, interpreting the making of *Zarya of the Dawn*, while also focusing on

¹³⁵ B. Edwards, *Artist receives first known US copyright registration for latent diffusion AI art*, *Ars Technica*, 22 September 2022, <https://arstechnica.com/information-technology/2022/09/artist-receives-first-known-us-copyright-registration-for-generative-ai-art/>, retrieved on 27 March 2024.

¹³⁶ See the response of Kashtanova and her legal team at Van Lindberg, *RE: Response under 37 C.F.R. § 201.7(c)(4) to the correspondence of Oct 28, 2022; RE: Registration of Zarya of the Dawn, Reg. No. VAu001480196; (Correspondence ID: 1-5GB561K), to Robert J. Kasunic*, 21 November 2022, <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf>, retrieved on 28 March 2024.

¹³⁷ In the assessment of copyright protection in the US law, only works with human authorship can earn such protection. More specifically, according to *ibid*, footnote no. 134, Section 306, <https://copyright.gov/comp3/chap300/ch300-copyrightable-authorship.pdf>, retrieved on 28 March 2024, this authority will register an original work for authorship protection only if it was created by a human author. This is an obligatory requirement with no exception, and such a requirement is not considered yet in the copyright protection assessment in the EU law.

the process of making the concerned artworks. It is emphasised that the idea of this story (with many terms that can fall into this category, mentioned as *the original conception, the inspiration the storyline, or the name of the characters*) is original, and such elements is copyright registrable at USCO. As stated in this letter:

There are no tools, of any sort, that can take the original conception of Kashtanova and, unguided by humans, create the type of immersive and integrated story that exists in the Work. Each picture communicates an essential element of the story, supporting and expanding upon the text written by Kashtanova. Our position is that every element of the Work reflects Kashtanova’s authorship.¹³⁸

With this line of argument, not only the idea described in the former paragraph is eligible for copyright protection. The idea of “*compilation*”, confirmed by the former US caselaw, will also be registrable under *the Copyright Act*.¹³⁹ Although Kashtanova did not draw any of the illustration in the comic book, she is the crucial one, the “*decider*” of how the images should look like in the end, to be included in *Zarya of the Dawn*. Since the final images of the comic book are consciously chosen by Kashtanova, the copyright protection towards such the arrangement shall be answered as affirmative.

The final point of this counterclaim, also the most crucial perspective in the debate of *Zarya of the Dawn* is whether the illustrations in this comic book are considered copyrightable. Similar to the former argument, such illustrations, as a part of the comic book, are also the result of the human creative process and shall be copyright-protected. Many points were presented to answer this assessment. Firstly, Van Lindberg claimed that Kashtanova could extract any of the concerned illustration and proceed the registration procedure at USCO to earn copyright protection. Such registration will be accepted and her authorship towards those drawings will be accepted lawfully. The lawyer further described the process of selecting the final illustrations (through Kashtanova prompts inputs, and generated results made by *Midjourney*) are “*creative selections*”. This can be seen as “*similar to the artistic process of photographers*”, even with more intensive and creative efforts. The human involvement in the creation of those images is determined by the choice of poses of the subjects, images points of view, or the conscious selection of visual elements in such images. All those factors are ultimately and

¹³⁸ *Ibid.*, footnote no. 136.

¹³⁹ According to Section 101 US Copyright Act, “*a work formed by the collection and assembling of preexisting materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship*” and will be subject to US copyright law protection.

consciously decided by Kashtanova. Since images created by photographers are copyrightable, such rights shall also be granted to Kashtanova.¹⁴⁰

Going into more details, the pictures are “*created, developed, refined, and relocated*” by Kashtanova through her input when using the GenAI tool. The assessment of how human text inputs can contribute to the images, or whether they constitute adequate human authorship is the centre issue of this case. Kashtanova also illustrated an insight on her “*prompts*” (as one of the types of input within the use of *Midjourney*) to prove the answer for such debate shall be affirmative. When using *Midjourney*, the prompts can be seen as a means of guidance to the GenAI tool, which are consistent with the author’s core creative input since they convey a description of what the picture should look like. To create the final images, Kashtanova visibly guided the GenAI tools through thousands of command prompts, from which the algorithms of this GenAI tool would use to generate images going in line with her artistic view. It is evident that *Midjourney* does not generate images randomly, but depending on the humans’ inputs to get the final results. Van Lindberg then took the view of the US Supreme Court, having said that “*a modicum of creativity is necessary to make a work copyrightable*”.¹⁴¹ Although the prompts maybe short, however, the length and complexity of the works is not a criterion to assess whether a work is copyrightable. Kashtanova team also made a bold claim, saying that the inputs alone can also be registered as copyrightable at USCO with her creative input and human authorship in the texts and images thereof generated by *Midjourney*.

Additionally, Van Lindberg also interpreted the current provisions of the *US Copyright Act*, to concrete his argument as follows.

The Copyright Act does not dictate that an author’s creative input be provided in a particular form or that an artist use a particular tool. So long as the creative output is fixed into a tangible medium of expression, any tool that allows the author’s creative expression to “be perceived, reproduced, or otherwise communicated” is eligible for copyright.¹⁴²

The last arguments proposed by Lindberg and Kashtanova concerning the use of computer software in her process creating the images. During the operation of USCO, also affirmed in former caselaw, works that are using computer-based tools in the artists’ creation are allowed to be copyrightable. A more specific example for this case is the use of *Adobe Photoshop* during the refinement of pictures “*to match the artists expressive intent*”. Van Lindberg relied on this point and led to the arguments that (i) there are circumstances

¹⁴⁰ See Case 188 U.S. 239, *Bleistein v. Donaldson Lithographing Company*, Supreme Court of the United States, 2 February 1903.

¹⁴¹ See Case 499 U.S. 340, *Feist Publications Incorporated v. Rural Telephone Service Company Incorporated*, Supreme Court of the United States, 27 March 1991.

¹⁴² *Ibid*, footnote no. 136.

where Kashtanova used *Midjourney* to create pictures from her initial ideas which shall be considered as no difference as using *Photoshop* and (ii) there are illustrations in *Zarya of the Dawn* that Kashtanova refined through *Photoshop*, before including them in the books to deliver her creative idea. With the proposed arguments, the illustrations shall be concluded to be eligible for copyright protection.

In summary, with this appeal, not only did Kashtanova claim her efforts of compilation with the texts and images in *Zarya of the Dawn* to be copyrightable, the whole comic book, or the AI-generated images let alone, are eligible for copyright protection in the US copyright law. With those copyrighted materials, Kashtanova, as the sole creator, will be the author of the whole work, including the illustrations generated through a GenAI tool.

4.1.1.4 *The conclusion of the case made by the USCO*

Robert J. Kasunic, the representative of USCO in this saga later wrote a comprehensive letter to Kashtanova to analyse, and at the end, conclude this registration case.¹⁴³ This reply aimed to solve the concern put up by the applicant, also to state the USCO opinion on copyright registration for works generated by GenAI tools. This can be seen a landmark step, to see how the US legislators would deal this unanswered legal matter.

In the first part of this letter, Kasunic had a recap on the background story of the *Zarya of the Dawn* case, concerning an eighteen pages comic book. This recap reflected the administrative process of this case, rather than the thoroughly description how this work was made. However, the emphasised points from this recap are (1) USCO was aware that Kashtanova had used *Midjourney* to create the illustrations as a part of her work; (2) the notification sent by this authority to declare their intention to cancel her registration of copyright protection for *Zarya of the Dawn*; and (3) the response from Kashtanova and her legal representatives to counterclaim such intention, proving that *Zarya of the Dawn* shall be copyright-protected as analysed in the previous part.

USCO took the starting point of the response with the classic assessment for copyright protection. To be eligible for this protection, every work must be an “*original*” work of authorship, as confirmed in the US Copyright Act.¹⁴⁴ Although the US Copyright Act does not elaborate or explain clearly how “*original*” shall be determined, this criterion has been explained by the US Supreme Court, with two crucial components as (1) the *independent creation* of the author and (2) *sufficient creativity*. In *Feist*, the court set out a very low threshold for this criterion. The US copyright law would only protect works

¹⁴³ See the reply to the request of Ms. Kashtanova at R. J. Kasunic, *Re: Zarya of the Dawn (Registration # VAu001480196), to Van Lindberg*, 21 February 2023, <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf>, retrieved on 28 March 2024.

¹⁴⁴ See Section 102(a) US Copyright Act: a work may be registered if it qualifies as “*an original work of authorship fixed in any tangible medium of expression*”.

with “*more than a de minimis quantum of creativity*”. In another way of saying, there would be no copyright protection for a work that is “*utterly lacking or so trivial as to be virtually non-existent*” in creativity. For example, an alphabetised telephone directory would fail to meet this threshold.¹⁴⁵

Another criterion for this assessment is “*work of authorship*”. For this criterion, protectable works will only limit to the creation of the human authors. This is also the reason USCO cancelled the copyright registration of *Zarya of the Dawn*, with a claim for the comic book to have lacked human authorship. Kasunic later explained in details, with former caselaw on how this criterion worked in practice. In *Burrow-Giles Lithographic Co. v. Sarony*, a photograph can be copyright-protected since it represents the intellectual conceptions of the author; with the author as “*the originator*” or “*the maker*”. If a work (in that case, a photo) is “*a merely mechanical process with no place for novelty, invention or originality*” from the human creator (specifically this case, a human photographer), then such work will not be eligible to earn copyright protection.¹⁴⁶ Another example is *Urantia* - concerning a book. The special feature of *The Urantia Book* is that it is claimed to have been written by celestial beings, discussing the life of our planet and the relationship between human beings and Jesus in his perspective, as a non-human being.¹⁴⁷ Later, the US district court concluded that if books contain words “*authored by non-human spiritual beings*”, those works can only gain copyright protection if there is “*human selection and arrangement of the revelations*”. The US copyright law regime does not protect the creation of non-human beings, “*some elements of human creativity must have occurred [for the work] to be copyrightable*”. Since the response came from USCO, Kasunic also gave the insight about this matter during the operation of this authority. In practice, as stated in *The Compendium*, USCO “*will refuse to register a claim if it determines that a human being did not create a work*”, with an example for such rejection is a photograph taken by a monkey.¹⁴⁸ Having considered such legal foundations, the next step is the assessment on whether of *Zarya of the Dawn* are eligible for copyright protection under the US law.

Three main elements are listed for the assessment in this case. The first two elements are (i) *the texts of this work* and (ii) *the selection and arrangement of texts and images in the comic book*. Based on the facts, it is easy for USCO to draw out the conclusion for the copyright protection of these elements, with the sole creation from Kashtanova. To be specific, all the texts in *Zarya of the Dawn* were solely written by her, without the help or assistance from any other tool or source. USCO concluded this as a work of human authorship; applying the *Feist* test, the texts will be copyright-protected and registrable in

¹⁴⁵ See the *Feist* case in *ibid*, footnote no. 141.

¹⁴⁶ See Case 111 U.S. 53, *Burrow-Giles Lithographic Company v. Napoleon Sarony*, Supreme Court of the United States, 17 March 1884.

¹⁴⁷ Get to know more about this book at *A Brief Description of The Urantia Book*, <https://www.urantia.org/urantia-book>, Urantia Foundation, retrieved on 2 April 2024.

¹⁴⁸ See *ibid*, footnotes no. 134 and 137, Section 313.2.

USCO. This authority also took the same opinion as Kashtanova for the selection and arrangement of texts and images in the comic book for copyright protection with the concept of “*compilation*”. Not only did she write all the texts by herself, Kashtanova was also the sole contributor, making the ultimate decisions on how texts and the images will be positioned in *Zarya of the Dawn*. USCO understood she was the one who “*selected, refined, cropped, positioned, framed, and arranged*” such images and words to create a proper story. Following the former court decisions like *Feist*, USCO accepted the compilation Kashtanova had made in *Zarya of the Dawn* as copyrightable, with sufficient creativity.¹⁴⁹ Therefore, “*the overall selection, coordination, and arrangement of the text and visual elements*” that make up [this comic book] is protected by US copyright law.

The final element, also the most decisive one to reach to the conclusion of this case, is the illustrations in the comic book themselves; whether they can be registered for copyright protection at USCO. Due to its novelty technical nature, this is a long-way and complex assessment.

In the initial step, USCO made a discovery on how the users, as Kashtanova in this case, would use *Midjourney*, a GenAI tool to create illustrations. The understanding of USCO came from a variety of sources (the document letters from *Midjourney*, other public documentation from this platform and USCO own knowledge). In this description, there are remarkable points to draw out in the perspective of copyright law. *Midjourney* AI tool integrated its services into a server of a third-party communication software called *Discord*. To use this tool, the users need to have an account on this software and join to the *Discord* server, which is set up and operated by *Midjourney*. In this server, the users can get into the “public text channels” and then can order this platform to generate images through inputs as “*prompts*”. These prompts are the commands describing the context of the pictures that *Midjourney* should generate for the users as outputs. This is the only method for the human users to communicate, to instruct and to influence *Midjourney* to generate their desirable results. More specifically, the prompts can be many forms, either in descriptive text phrases (*text prompts*), or web pages that contain other images as a reference (*image prompts*), or in *parameters* (to further describe how varied the results will be, or the aspect ratio of the images).¹⁵⁰ The more detailed the prompts are, the closer it is for the results to resemble the idea of such inputs.

¹⁴⁹ See *ibid*, footnote no. 141 for *Feist* case. See also *ibid*, footnote no. 134, Section 101 for the definition of “*compilation*”. This concept has also been confirmed to be protected by the registration procedure in USCO.

¹⁵⁰ Get to know more on how the prompts work at *Midjourney Prompts*, <https://docs.midjourney.com/docs/prompts-2>, retrieved on 3 April 2024. In the case of *Zarya of the Dawn*, or the focus of this topic, when mentioning “prompts” later on, the author would mean text prompts in specific.

From the inputs of the users, USCO moved to the next step, to see what would happen after *Midjourney* has received the requests of the human users, to create a picture. From USCO understanding, *Midjourney* does not understand human languages. After receiving the input prompts, the algorithms of this GenAI tool will break down the words within such prompts into smaller pieces called “*tokens*”. This tool will later compare such tokens with the GenAI training database to generate the final result as images.¹⁵¹ To generate this result, as discussed in the former section of the thesis, the GenAI tool will first see the tokens as “*visual noise*” and then using algorithms to refine such static into human-recognisable images.¹⁵²

With this understanding, the USCO decided to go against the argument proposed by Kashtanova about a certain amount of human creativity and human authorship of images generated by GenAI tools. The analysis of USCO has shown that the ultimate images created in the GenAI algorithms and process conducted by *Midjourney* “*is not the same as the works created by a human artist, writer or photographer*”. Since the user cannot predict beforehand the exact results that *Midjourney* will generate, the images creation process is not controlled by the human user. Although Kashtanova claimed to have “guided” *the structure and the content* of the illustrations, “it was *Midjourney* that originated the *traditional elements of authorship of the images*”. In the explanation of the US Supreme Court, “author” in the US copyright law regime is the one “*who has actually formed the picture*”, or “*the one who is inventive or master mind*” of this work.¹⁵³ For images on *Midjourney*, those attributes are not assigned to the human users since humans cannot determine this creation process step-by-step. The only contribution through prompts in the beginning to the creation process on *Midjourney* does not mean that human “actually form” or become the “master mind” of those images. Additionally, the results from such prompts are unpredictable, and there can be “*significant distance between what a user may direct Midjourney to create and the visual material Midjourney actually produces*”. For the conclusion of USCO, *the main actor* of AI-generated images is the GenAI tool itself.

USCO later went to counterclaim the other arguments put up by Kashtanova. The first argument was the comparison between the use of *Midjourney* to create illustrations and the use of other computer based-tools (like *Adobe Photoshop*), or the photographer ultimately choosing what to be included in his photos. USCO rejected the copyright protection on this point for the same reason taken from the former argument. Human users, when using GenAI tool

¹⁵¹ *Ibid.*

¹⁵² See Part 2.2, *The history of AI (or GenAI) generating images* for another way of introducing the process of images created by GenAI tools.

¹⁵³ See *Burrow-Gilles, ibid*, footnote no. 146.

cannot have the comparable control like photographers or users of other assistive tools, which can be seen when selecting what visual material to modify or taking other specific steps to control any part of the image.

USCO also rejected copyright protection for AI-generated images on the basis that the images on *Midjourney* are “*the visual representation of creative, human-authored prompts*”. For USCO, the situation of Kashtanova using prompts in *Midjourney* (or any other GenAI tool) would resemble “*the situation a client hiring an artist to create images, following the directions of the clients about their main contents*”. With this standing, the author will not be Kashtanova, the one gives the instructions for the general contents of the images, but the author will be the one who “*received those instructions and determined how best to express them*” – similar to the situation of the “*work-for-hire*” doctrine.¹⁵⁴ Going further on this argument, in cases where Kashtanova would type the keywords she had used to generate illustrations on *Midjourney* into search engines (like *Microsoft Bing* or *Google*), she could not claim the images on the search results with her as “the author” of such images since they resemble her artistic vision.

Another line of argument that copyright protection towards the illustrations in *Zarya of the Dawn* shall be granted to Ms. Kashtanova because of her time and efforts working with *Midjourney* (through thousands of text prompts to get the desirable illustrations). This argument is also not accepted by USCO, taken from the former caselaw of the US courts. To be specific, USCO “*will not consider the amount of time, effort, or expense required to create the work*” since these factors do not prove that works would contain the amount of minimum creativity, which is the crucial criterion for copyright protection required by the *US Copyright Act* and the *US Constitution*.¹⁵⁵

However, those previous arguments only serve one side of this dispute. There are a number of pictures that Kashtanova edited after downloading from *Midjourney*. After such amendments, she included those artworks in the published *Zarya of the Dawn*. With that effort, she suggested USCO to examine the test for copyright protection to grant her the right for such works. The USCO first acknowledged this fact; however, this authority cannot simply rely on such claim to conclude that such effort “*are sufficiently creative [for Kashtanova] to be entitled to copyright*”. There shall be a thorough assessment conducted by USCO to compare the illustrations before and after the use of *Adobe Photoshop* software. This idea was also accepted in former

¹⁵⁴ “*work-for-hire*” is a legal doctrine in the US copyright law where an individual or a legal person hires another individual, or its employees to create a work; that hired individual or such employee will be considered the lawful author of that work, with protection guaranteed by the US copyright law. See *ibid*, footnote no. 134, Section 101. See also *Circular 9: Works Made for Hire Under the 1976 Copyright Act*, The United States Copyright Office, August 2003, https://global.oup.com/us/companion.websites/fdscontent/uscompanion/us/pdf/houp/7_5.pdf, retrieved on 4 April 2024.

¹⁵⁵ See *ibid*, footnotes no. 134 and 137, Section 310.7.

cases, where USCO will register works with unprotectable materials if they are “edited, modified or revised” by a human author if such changes “*contain sufficient amount of original authorship*”.¹⁵⁶ However, *Zarya of the Dawn*, USCO reached the conclusion that there are too minor differences between the illustrations created by the GenAI tool with the ones amended by Kashtanova. Such changes then would not constitute adequate creativity for copyright protection. Furthermore, there are also other claims of images with similar reasoning without any reference for USCO to compare. With such lack of information, USCO cannot clearly determine what was the contribution of Kashtanova in the final images; and cannot grant her copyright protection only through such simple claim.

In conclusion, USCO had a new result for *Zarya of the Dawn* case. Instead of cancelling the whole copyright registration certificate, this authority decided to cancel a “part” of this registration, due to “*inaccurate and incomplete information*”. To be specific, USCO will recognise and protect the creative works solely made by Kashtanova, which include the “*text*” and the “*selection, coordination, and arrangement of text created by the author and artwork generated by AI*”. For the illustrations purely produced by AI (or GenAI tool), they are not copyrightable, according to USCO. This rejection is explicitly stated in the copyright registration certificate, as excluding “*artwork generated by AI*”.

Receiving such result. Ms. Kashtanova later celebrated this registration and calling it as “*a great day for everyone that is creating [works] using Midjourney and other [GenAI] tools*”. However, she also felt disappointed that the AI-generated illustrations are not registrable in USCO. In her *Instagram* post declaring this matter, she summarised the USCO decision with her counter opinions as follows:

I think that they didn't understand some of the technology so it led to a wrong decision... It is fundamental to understand that the output of a GenAI model depends directly on the creative input of the artist and is not random.

My lawyers are looking at our options to further explain to the Copyright Office how individual images produced by Midjourney are direct expression of my creativity and therefore copyrightable.¹⁵⁷

Kashtanova and her legal team are searching for other options to yet again, re-appeal the latest registration certificate from the USCO. This time, Kashtanova would like to further explain how GenAI tools, specifically

¹⁵⁶ *Ibid*, Section 313.6(D).

¹⁵⁷ Kristina Kashtanova (kris.kashtanova), *I received the Copyright Office's decision today about Zarya of the Dawn*, Instagram, 22 February 2023, <https://www.instagram.com/p/Co-aYkQumio>, retrieved on 5 April 2024.

Midjourney would create the images. The crucial point in the opinion of Kashtanova is that the creation process on *Midjourney* and the generated results are a direct expression of human creativity. Therefore, such images, and the whole work in the case of Kashtanova shall be considered as copyrightable. Although the USCO decision is not considered as the final answer for the discussion of copyright protection for AI-generated works, *Zarya of the Dawn* is a valuable case study for this discussion not only in the US, but also in EU.

4.1.2 Later development – with *Stephen Thaler* case and guidance from USCO

Zarya of the Dawn can be considered as one of the first legal case studies concerning the relationship between AI-generated works and copyright law, but this is not the latest decision of the US law on this topic. In August 2023, another notable step was made regarding this discussion, this time a judgement from the US court.¹⁵⁸

The starting point of this case is *Stephen Thaler*, a famous computer scientist in the field of AI. Before this case, he already filed a dispute in front of the US court concerning patent law. That case also had with a somewhat similar circumstance with *Stephen Thaler v. Shira Perlmutter*, with his AI system called *DABUS* – a system capable being an “AI inventor”.¹⁵⁹ The case at hand in the District Court of the District of Columbia concerned another AI system, which was also developed by Stephen named *Creativity Machine*. The special feature of this AI system is its capability of “generating original pieces of visual art, akin to the output of a human artist”. One of the works generated by this system, *A Recent Entrance to Paradise*, was attempted for copyright registration in USCO in 2019. Despite all using AI systems, there are big differences between the case of *Stephen Thaler* and *Kristina Kashtanova*. With *Midjourney* or *ChatGPT*, they are developed by a tech company (acting as the operator of such systems), and the users who get the images through prompts are not the same entity (with Kashtanova). In the copyright registration application of *A Recent Entrance to Paradise* in USCO, *Stephen Thaler* indicated the author of this artwork is the AI system (as *Creativity Machine*) and Thaler would be the owner of this right, since he is the owner (as the creator) of this system. Another big difference is the basis for copyright protection. As mentioned previously, Mr. Thaler admitted the AI system as the author of the artwork but claiming the right to himself. Such request would

¹⁵⁸ See Case 22-1564 (BAH), *Stephen Thaler v. Shira Perlmutter, et al*, United States District Court for the District of Columbia, 18 August 2023.

¹⁵⁹ See Case 1:20cv903, *Stephen Thaler v. Andrew Hirshfield, et al*, United States District Court for the Eastern District of Virginia – Alexandria Division, 24 February 2021. In short, this court rejected the possibility of an AI-powered system to be recognised as an “inventor”, since this term only subjects to “natural person”. From 2019-2023, a series of cases in the UK concerning similar issues, and the UK Supreme Court also confirmed that according to the UK Patents Act and the UK Patent Rules, the “inventor” must be a natural person. See Case UKSC 49, *Thaler v. Comptroller-General of Patents, Designs and Trademarks*, United Kingdom Supreme Court, 20 December 2023.

be based on the “*work-for-hire*” doctrine, which was accepted in former caselaw.¹⁶⁰ However, similar to *Zarya of the Dawn*, USCO rejected this registration due to the lack of “*human authorship*” in the creation of the work. In his appeal to the District Court of Columbia District, he requested the court to reconsider this case, “*urging that AI should be acknowledged as an author, with copyright ownership vesting in the AI’s owner*”.¹⁶¹

To find the conclusion, Judge B. A Howell analysed the former caselaw on copyright, where the US court had to deal with cases where non-human entity involved in the creation of a work. In my opinion, this assessment had the similar approach, or the lines of argument that USCO had used in *Zarya of the Dawn* (with many citations taken from *Burrow-Gilles*).¹⁶² The court, in this case “*acknowledged the complex questions posed by AI but asserted that the case at hand was not as intricate*”.¹⁶³ There were former copyright cases involving non-human authors, for example, the US court already rejected the copyrightability of a photo taken by a monkey under the US law.¹⁶⁴ With such approach, Judge Howell decided to uphold the USCO decision. The reasoning for the rejection of copyright registration is clarified following that:

Human involvement in, and ultimate creative control over, the work at issue was key to the conclusion that the new type of work fell within the bounds of copyright. Copyright has never stretched so far, however, as to protect works generated by new forms of technology operating absent any guiding human hand, as plaintiff urges here. Human authorship is a bedrock requirement of copyright.¹⁶⁵

Based on this argument, the District Court of the District of Columbia reached the conclusion that (1) the artworks that are created by an autonomous computer system (as an AI system), with no human involvement are not copyright-protected under the US law. Furthermore, Mr. Thaler cannot put any evidence to prove his contribution to the work which constitute sufficient creativity to earn copyright protection, which is why (2) *A Recent Entrance to Paradise* does not fall within the scope of copyright protection. Ultimately, Mr. Thaler’s claim to become the beneficiary of for the copyright of this work was dismissed, since there is no right existed in this dispute.

Both *Zarya of the Dawn* and *A Recent Entrance to Paradise* are the two recent signature case studies on the legal discussion about the copyrightability of

¹⁶⁰ *Ibid*, footnote no. 154.

¹⁶¹ *Ibid*, footnote no. 158.

¹⁶² See *Burrow-Gilles* case, *ibid*, footnote no. 146.

¹⁶³ A. Mathur, *Case Review: Thaler v. Perlmutter (2023)*, Centre for Art Law, 11 December 2023, <https://itsartlaw.org/2023/12/11/case-summary-and-review-thaler-v-perlmutter/>, retrieved on 7 April 2024.

¹⁶⁴ Case 888 F.3d 418, *Naruto v. David John Slater*, United States Court of Appeals, Ninth Circuit, 23 April 2023.

¹⁶⁵ *Ibid*, footnote no. 158.

AI-generated images. For the US law, AI-generated images, with prompts as the sole indicator of the human involvement into this work, do not illustrate adequate creativity. In conclusion, works created from wording prompts, through GenAI algorithms will not be copyrightable. After the story of Kashtanova, USCO later published a guidance to show how works containing AI-generated materials will be eligible to earn copyright protection at this authority. USCO expressed their view towards the copyright protection for AI-generated works, with human contribution solely through texts prompts as follows:¹⁶⁶

... when [AI] receives solely a prompt from a human and produces complex [visual] works in response, the “*traditional elements of authorship*” are determined and executed by the technology - not the human user... these prompts function more like *instructions to a commissioned artist* - they identify what the prompter wishes to have depicted, but the machine determines how those instructions are implemented in its output. When [AI] determines the expressive elements of its output, the generated material is *not the product of human authorship*... that material is not protected by copyright...

However, it does not mean that any AI-generated (or AI-assisted) illustrations will not earn the protection under the copyright law regime, since:¹⁶⁷

work containing AI-generated material will also contain sufficient human authorship to support a copyright claim. For example, a human may select or arrange AI-generated material in *a sufficiently creative way that “the resulting work as a whole constitutes an original work of authorship.”* Or... *modify material originally generated by AI technology to such a degree that the modifications meet the standard for copyright protection... copyright will only protect the human-authored aspects of the work, which are “independent of” and do “not affect” the copyright status of the AI-generated material itself.*

Elaborating further from those points, USCO has also set up specific requirements, offering a proper guideline for AI-generated works to be eligible for

¹⁶⁶ See Section III, *Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence*, Federal Register, 16 March 2023, <https://www.federalregister.gov/documents/2023/03/16/2023-05321/copyright-registration-guidance-works-containing-material-generated-by-artificial-intelligence>, retrieved on 7 April 2024.

¹⁶⁷ *Ibid.*

registration under the operation of this authority. This guideline can be summarised into a five-step test, as proposed in the following paragraph.¹⁶⁸

- Applicants seeking registration of AI-assisted works must state this in their application and explain the human contribution to the work.
- Works that consist of selections of works created by humans and AI-generated works, it is necessary to specify who has coordinated the works and which works have been created or generated respectively by humans or AI.
- There is no obligation to name the AI or the company that offers the services as authors or co-authors (otherwise stated in the terms and conditions of the use of the AI systems/tools).
- If the AI-generated content is minimal, it does not need to be identified (for example, using a short quote or short phrases).
- In cases where the application is in the process (or works that have been registered), the applicants have to correct the information of the works and clearly indicate the part that is AI-involved to ensure not to lose the benefits of copyright.

This guidance can be seen as a milestone for the answer to the legal debate of copyright protection for works that are generated by AI, or AI-assisted works. The answer to this unsolved legal matter would not only have an influence to copyright law in the US, but it may also create a global impact on how legislators will perceive this novelty technology, especially in the context of copyright (and even IP law), including the EU.

4.1.3 Potential-risks for the US legal choice

As demonstrated through the stories of Kashtanova and Thaler, for now, the US copyright law does not accept copyright protection for works generated through GenAI tools like *ChatGPT* or *Midjourney*. The main reason for this rejection is that, only with human contribution through prompts, it “does not constitute adequate necessary creativity” for a work to be copyright-protected. Works solely (or mainly) created by AI technology will be viewed as non-copyrightable due to the lack of human authorship, which leads to the failure for the assessment of “*novelty, invention or originality*”.

¹⁶⁸ C. Mesa, *The US Copyright Office publishes new guidelines for the registration of AI-generated works*, Garrigues, 24 March 2023, https://www.garrigues.com/en_GB/garrigues-digital/us-copyright-office-publishes-new-guidelines-registration-ai-generated-works, retrieved on 7 April 2024.

The only route for the human creators to seek copyright protection for their creative works is to evidently illustrate that the AI involvement is just assistive, or clearly indicate the part of the work that is solely created by humans. If such part is considered as “*sufficiently creative*”, then the author can earn the copyright protection only for such part. It is good to have guidance as such, both for the authority officers to have a transparent procedure during its operation and improve the governance in this novelty field. For the authors and related parties, such guidance would help them in the perspective of legitimate expectation in the field of IP when connecting to the use of AI technology. However, we cannot ignore the fact that there are still unclarities on this matter. Such unclarities may be on how this new mechanism work, or on what level of AI-contribution that still guarantees for the human efforts to be seen as “*sufficient creativity*” to earn the status of copyright protection.

After the stories of Kashtanova and Thaler brought into the light, there have been many academic papers published regarding the discussion of the copyrightability of works that have the contribution of GenAI. One of the interesting discussions in the perspective of the US law can be seen in an article written by Mark A. Lemley, one of the reputable name in this academia sector.¹⁶⁹ In this article, he commented the legal approach taken by the USCO in *Zarya of the Dawn* would somehow resemble the so-called “*prompt-based approach*”. To be precise, this legal thinking would “ignore the creativity contributed by the AI, but continues to reward creativity contributed by users”, as long as this contribution (through text prompts) constitute adequate creativity. Despite being a good idea to take, however, the current copyright legal doctrine, as discussed by Lemley, is not well-designed for this approach. The “*prompt-based route*” may lead to the rethinking, even overturn of the two foundational principles of copyright law – the *idea-expression dichotomy* and the *substantial similarity test* when dealing with copyright infringement.¹⁷⁰ He also assumed that applying the existing doctrine, the copyrightability of AI-generated works would be thin, and if every outputs would be protected, the “*attractive or valuable [part of this type of work] may well be things copyright doesn’t protect*”. If this type of work is non-copyrightable at all, copyright law mechanism will be weakened when more creative activities would be bound up with AI. In the conclusion for the analysis of this legal matter, he is still strongly in support for the idea of the “*prompt-based approach*”, despite the difficulties in application as it is now today. For Lemley, the reason for his support is that such approach would still be the proper mechanism to encourage and safeguard human creativity, which is the ultimate goal of copyright law. Developing from this line of argument, the most plausible answer of the moment, in the opinion of Lemley, would be called as the “*limited prompt-based approach*”. The assessment for copyright protection according to this approach would look at the creativity in the “*human*

¹⁶⁹ M. A. Lemley, *How Generative AI Turns Copyright Upside Down*, Science & Technology Law Review, Vol. XXV, Columbia Law School, Spring 2024.

¹⁷⁰ *Ibid.*

structuring of the prompts producing those outputs” rather than the generated results from the GenAI tools. The proposed route is seen to be suited since it still requires the human creativity (even in the bare minimum of originality), and it still goes for the encouragement of such creativity, which is the ultimate goal of copyright law. However, with the prediction of Lemley himself, the copyright protection of this proposed doctrine is applied would be really strict and extremely narrow in implementation.¹⁷¹

In my opinion, there is still also another room for copyright protection towards AI-generated images if there are changes in the perception on the interaction between humans and AI, on how this technology works. There is also a possibility that US copyright would remove human authorship as one of the criteria for the assessment for a copyright-protected work. However, with the line of argument used by Judge Howell, I see it very hard for the US law to abolish or extend this border. For now, US legislators will need more time to monitor the development of this technology, both in the scientific or legal perspective, to continue updating the proper guidance in the future to tackle new issues regarding this legal relationship.

4.2 China

China is also a country that has an eager attitude when it comes to developing policies towards AI technology, not only in the perspective of technology, or facilitating the business in this field. China is also one of the first countries that published judgments on whether we should protect AI-generated works under copyright law regime. It is more impressive that such discussion has started in China for quite some time, since 2018.

4.2.1 General remarks about China (copyright) law

Before this discussion, there are things to note about Chinese legal systems with its unique characteristics. According to legal scholars, China follows the “*socialist legal systems*”, on the foundation formerly used by the Soviet Union. The origin of this legal system can be traced back with the heavy influence from the German Civil Code. Different compared to the civil law system (especially in the political nature), they still share similarities, specifically in the source of law and the role of written law (as the primary sources).¹⁷² In China, judgement from the court is not a primary source of law, however, it would play a pivotal role to see the direction that the scholars (and practitioners) have chosen to go regarding a legal matter.¹⁷³ This idea is also applied in the field of copyright law.

¹⁷¹ *Ibid.*

¹⁷² See more about the feature of socialist legal system in Chapter 6, *Socialist Law and other types of Legal Systems*, P. de Cruz, *Comparative Law in a Changing World (2nd edition)*, Cavendish Publishing Limited, 1999, pp. 183-212.

¹⁷³ *China: Starting Points for Legal Research: Background Information*, LibGuides at Brooklyn Law School, <https://guides.brooklaw.edu/china>, retrieved on 10 April 2024.

Copyright law in China had a late beginning, with the first *Copyright Law* adopted in 1990 to protect copyright “*in the real sense*”.¹⁷⁴ According to the current *China Copyright Law*, except otherwise provided, the copyright of a work shall belong to its author. The author of a work is the citizen who has directly created the work, which is the *de facto* author. In cases where the work is created under supervision or intention of another legal person, such person will be considered as the author of that work. For example, the China Copyright Law would allow the grant of “author” concept to the organizations in the case of high-tech works or software following the logic of “*work-for-hire*” doctrine.¹⁷⁵ With this indication, China Copyright Law has not officially accepted to grant copyright protection to works solely created by machines (like AI system) in its written law. As further analysed in the judgements of the Chinese courts, the criteria for a work be eligible for copyright protection would include: (i) a protectable work in accordance with the China Copyright Law; (ii) it would constitute human authorship, and (iii) the work passes the originality test, with original human expression.

4.2.2 The first judgements about copyright protection for AI-created works.

Started in 2022, *Zarya of the Dawn*, as mentioned earlier, is the first notable series of events about the legal relationship between copyright and AI-generated works. However, for the story in China, this country has published judgements from the national courts to answer this legal discussion before that for a while, starting with the first two remarkable cases, *Beijing Film* and *Tencent*.¹⁷⁶

4.2.2.1 *Beijing Film case*

In 2018, *Beijing Film Law Firm* (the plaintiff of this case) published a report containing the judicial decisions about the film industry in Beijing on its *WeChat* account (a social media platform mainly operated in China) (“**The Judicial Report**”). Later, a part of The Judicial Report was reposted on another platform operated by the defendant (*Baidu*). *Beijing Film* brought many claims in front of the Beijing Internet Court (“**BIC**”), one of them concerning a violation of copyright law (specifically the right of authorship and the right

¹⁷⁴ Q. Sanqiang, *Intellectual Property in China*, Wolters Kluwer, 2012, p. 87.

¹⁷⁵ Y. Guo, *Modern China’s Copyright Law and Practice*, Springer, 2017, p. 59. This provision is considered to follow the idea of the “work-for-hire” doctrine in US copyright law, *ibid*, Q. Sanqiang, p. 108. For the definition of author, see Article 11, *Copyright Law of the People’s Republic of China (2010 Amendment)*, The State Council of The People’s Republic of China, 23 August 2014, https://english.www.gov.cn/archive/laws_regulations/2014/08/23/content_281474982987430.htm, retrieved on 10 April 2024.

¹⁷⁶ See Chapter 3, Y. Wan and H. Lu, *Copyright protection for AI-generated outputs: The experience from China*, Computer Law & Security Review, No. 42, Elsevier, 2021 for the comprehensive assessment of the two cases, with a thorough introduction of the Chinese copyright law system in the former part of the paper.

of integrity).¹⁷⁷ The defendant, on the other hand, argued that this report was generated by statistical data software (*Wolters Kluwer Legal Database*) and The Judicial Report is lack of originality; and shall be considered as non-copyrightable.

Before reaching the conclusion, BIC went into the copyright protection assessment for The Judicial Report, with four bullet points. The first point is about (1) originality.¹⁷⁸ In this criterion, the report satisfied the formal requirements of a written work and had a certain degree of originality. However, with the current Chinese copyright law regime, originality alone does not constitute sufficient condition of a written work. To pass this test, just like the concept of “author”, the work (2) must be created by a person, with (3) human authorship. The line of argument proposed by BIC was somehow similar to *Zarya of the Dawn*. This court viewed the process of creating The Judicial Report, and the human contribution to this work can only be seen through the *development* and *the use of this software*. The Judicial Report had not conveyed any “*original [human] expressions*” since it was created in two stages, as the input keywords included by the user of the software and the process of generating the result, which is solely conducted by the algorithms of the statistical data software. Consequently, such efforts do not constitute human creativity and lack of human authorship; for the AI software, at that time, this entity will not be considered as the author of a copyrighted work. In the end, BIC concluded that due to the lack of such criterion, The Judicial Report is not “*a work*” in the scope of China Copyright Law and cannot be copyrightable.¹⁷⁹

However, such rejection does not mean the court totally closed the possibility of copyright protection towards AI-generated works, and such works would fall into the public domain and can be freely used by the public. The court later suggested to consider both the benefit of the AI-software developer and the user of such software. If AI-generated works are non-copyrightable, the developers would have no motivation to distribute the software since they serve the needs of the users, and those works started from the users, not the developers. On the relationship between the developers – users, there is a monetary connection link. The developers would expect to get income from if there are people using their product; on the other side, the users will need to pay a sum of money to use the software and get the report. If it is decided

¹⁷⁷ Beijing Internet Court is the first instance court that is specialised in specific types of internet-concerned cases and applying new technology (like AI or blockchain) into the litigation procedures. See more in *Introduction*, Beijing Internet Court, 26 March 2019, https://english.bjinternetcourt.gov.cn/2019-03/26/c_26.htm, retrieved on 11 April 2024.

¹⁷⁸ With the current framework of Chinese copyright law, originality is a criterion which is uncertain and complicated between (i) certain degree of intellectual creation and/or (ii) the personal expression of the author. See Chapter 2.1, *ibid*, footnote no. 176.

¹⁷⁹ See Case Jing 0491 Min Chu No. 239, *Beijing Film Law Firm v. Beijing Baidu Netcom Science Technology Co Ltd.*, Beijing Internet Court, 2018. See the translation of this judgement in [https://www.chinadaily.com.cn/specials/BeijingInternetCourtCivilJudgment\(2018\)Jing0491MinChuNo.239.pdf](https://www.chinadaily.com.cn/specials/BeijingInternetCourtCivilJudgment(2018)Jing0491MinChuNo.239.pdf), retrieved on 19 April 2024.

to be non-copyrightable, the number of users would decrease, or they would be not willing to distribute such works. To avoid such drawbacks, which would not only be harmful to those parties, but also seen as a risk to the idea of cultural expression, BIC proposed some solutions to protect the rights of the parties, as illustrated follows:¹⁸⁰

- A notation should be included that the works are generated/created by AI software.
- Although the AI-generated works cannot be copyright-protected, there shall be a protection mechanism due to the investment of the creation for such work.
- Such protection shall only be offered, or focused to the user of the software rather than the developers since they are rewarded from the source of income paid from the users in the use of such software.
- Elaborating on that former point, this protection mechanism will bring benefits to the developers, in a way to encourage the users to generate more works that are copyrightable. Eventually, this may lead to a rise in income for the software developers.

Despite being an interesting line of argument, BIC did not indicate which kind of rights or interests can be used to facilitate this protection mechanism, while formerly rejected to apply the copyright law regime. This was a gap of law left unanswered, and at that time, more caselaw would be needed to analyse and solve this riddle.

4.2.2.2 *Tencent case*

The plaintiff of the case is a giant entity in the technology sector on the Chinese market, *Tencent*. This company created an AI-based writing assistant named *Dreamwriter* in 2015. In August 2018, this machine automatically published a financial report on *Tencent* website (“**The Financial Report**”). It is indicated at the end of The Financial Report that it “*was automatically written by the Tencent robot Dreamwriter*”.¹⁸¹ Such indication can be seen to follow the proposal made by BIC in *Beijing Film Law Firm* case, to safeguard the rights of the plaintiff, as the owner of this AI system. On that same day, the defendant, *Yingxun* company, published The Financial Report on their website without any authorization from *Tencent*. The plaintiff brought this

¹⁸⁰ K. He, *Feilin v. Baidu: Beijing Internet Court tackles protection of AI/software-generated work and holds that copyright only vests in works by human authors*, IPKat Blog, 9 November 2019, <https://ipkitten.blogspot.com/2019/11/feilin-v-baidu-beijing-internet-court.html>, retrieved on 13 April 2024.

¹⁸¹ See Chapter 3.2, *ibid*, footnote no. 176.

case to the Nanshan District Court in Shenzhen, with one of the claims is that this is a copyright infringement from the defendant.

Similar to the *Beijing Law Firm* case, The Financial Report (1) passed the test of originality. This work, created by the staff of *Tencent*, satisfied the formal requirements of a written work, with a clear structure and a logical expression about the data in the stock market. For that analysis, the report passed the threshold of creativity. However, the criterion that made this case stand out from the former judgement, is (2) the assessment of human contribution to the work. With the case of The Financial Report, it is important to consider “*whether it reflects the creator's individual choice, judgement and skills and other factors*”.¹⁸² The court began at how the AI system would automatically generate such reports, which would involve a four-step process as (i) data service; (ii) triggering and writing; (iii) intelligent verification and (iv) intelligent distribution. In those aforementioned steps, the human contribution, specifically the staff of *Tencent*, was determined by the court when humans “*made arrangements and choices in data input, themes expressed in articles, writing styles...*” in the humans personalised way.¹⁸³ With that explanation, the court of Shenzhen concluded The Financial Report was eligible to be viewed as a work created by a human being, in the light of China Copyright Law, and therefore copyrightable. The last element in the discussion of the case is the authorship and the ownership of the AI-generated report. Throughout this analysis, the Chinese court had an align opinion that The Financial Report was a creative work of the *Tencent* staff, with the intention and the investment of this entity during the creation of this report (hiring the human staff or spending money to develop *Dreamwriter* AI system). Due to those reasons, the court found the copyright status of The Financial Report to fall within the “work-for-hire” doctrine, similar to the US copyright law regime, and for that reasoning, it is *Tencent*, as a legal person, to earn the ownership and, further than that, the authorship of The Financial Report.¹⁸⁴

4.2.3 *Li v. Liu* – the first case about AI-generated images

The former discussion gave us an overview on the perception of Chinese court about copyright protection towards AI-generated works. However, the works concerned in those cases are written works. Theoretically, the form, the content, or the creation process of AI-generated images can be different from a written work. Will the answer towards copyright protection of this type of work be different? In November 2023, BIC released another landmark judg-

¹⁸² See Case Y0305MC No. 14010, *Shenzhen Tencent v. Shanghai Yingxun*, Shenzhen Nanshan District People's Court, 2019. See the summary of this judgment in English at <https://www.wipo.int/wipolex/en/text/585875>, retrieved on 7 May 2024.

¹⁸³ Z. Dai and B. Jin, *The copyright protection of AI-generated works under Chinese law*, Tribuna Juridică, Vol. 13, Issue 2, Editura ASE, 2023.

¹⁸⁴ *Ibid.*

ment, aiming specifically at copyright protection towards AI-generated images. Compared to *Beijing Film Law Firm*, there were notable changes in the line of argument proposed by BIC, which will be further discussed.

On 24 February 2023, Li (the plaintiff) used an open-source AI-based software named *Stable Diffusion*, entering prompts in wordings or numbers to generate an illustration of a girl. The plaintiff later published this illustration on his account in *Xiaohongshu*, one of the most popular social media platforms in China, titled “*Spring Breeze Brings Tenderness*”. In March 2023, Li found out that this illustration was reposted on another social media platform, *Baijiahao*, in an article posted on Liu’s account – named “*Love in March, in the Peach Blossoms*”.¹⁸⁵ This republication was without the permission or authorisation of the plaintiff. Furthermore, when reposting such illustration, Liu removed the watermark on *Xiaohongshu*, causing the users to think that this is Liu’s picture.¹⁸⁶ Li brought this case in front of the BIC, claiming a copyright infringement on the right of authorship. In the request, Li demanded Liu to (1) make a public statement to apologise and eliminate the adverse effects, and (2) pay compensation for such infringement. The defendant argued that (i) the published of the defendant is the original poem, not the illustration that the defendant got on the Internet; (ii) the use of this illustration is not commercial use; (iii) in case BIC sees that such republication is an infringement of copyright law, the defendant will only accept the request to make an apology, since the amount of compensation requested is excessively high.

To prove the contribution to this work, Li thoroughly described his creation process, listing the specific content of the prompts.¹⁸⁷ Compared to the use of *Midjourney*, the nature of this process is not much difference, notably except how the human users can get access to those AI-based tools. In *Zarya of the Dawn*, to use *Midjourney*, you can only communicate with this AI tool through a third-party application, *Discord*. For *Stable Diffusion* in *Li v. Liu*, the plaintiff installed a package software called *Stable Diffusion Integration Package v4.2* by downloading it online and can use it locally on the computer. Within an in-court examination, BIC concluded this process as “*when the plaintiff modified individual prompts or altered individual parameters, the images generated were different*”.¹⁸⁸ In my opinion, this is a crucial point of

¹⁸⁵ Case Jing 0491 Min Chu No. 11279, *Li v. Liu*, Beijing Internet Court, 27 November 2023. See the English translation of this judgement in <https://english.bjintercourtcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf>, retrieved on 19 April 2024.

¹⁸⁶ See another translation of the case in *Copyright Protection for ‘AI-Generated’ Images*, GRUR International, Vol. 73, Issue 4, Oxford University Press, April 2024, pp. 360 – 368.

¹⁸⁷ For a specific description, to see a step-by-step instruction to BIC how the illustration was made, see *ibid.*, footnote no. 185 and 186.

¹⁸⁸ *Ibid.*, footnote no. 186.

this dispute, before the court answer the possibility for copyright protection towards AI-generated images as such in this case.

BIC began the assessment by pointing out the important legal issues concerned in this dispute as follows:

- (1) Whether the AI-generated image constitutes a work, and what type of work it is according to China Copyright Law;
- (2) Can the plaintiff (the human using AI-tool to generate such image through prompts) earn the benefits of the copyright attached to that image?
- (3) Whether the act of the defendant violates the China Copyright Law, and whether the defendant will be liable for such violation.

BIC dealt with the dispute in a classic way, answering question by question. The first matter of concern is the criteria for that image to be seen as a “work”. It is undisputable that (i) the image has a certain form of expression (*as no different from a photo or a painting*) and (ii) it clearly belongs in the field of art. Two crucial elements that are in further consideration are (iii) adequate intellectual achievement and (iv) originality test. For a work to have “intellectual achievement”, it should reflect a natural person’s intellectual input. Through the knowledge of BIC, when a user creates images on *Stable Diffusion* through prompts, that user has provided a certain amount of “intellectual input”. Such contribution can be seen through the way the character in the image is presented, the user choosing the input prompts or arranging the order of such prompts, selecting the images that meet that user expectation. Compared to *Beijing Film Law Firm*, BIC, overturned this former judgement. For the first time, this court recognised adequate “*intellectual achievement*” when human using prompts on GenAI tools to create works, specifically images.

However, this does not mean it will be a protectable work under China Copyright Law. “*Originality*” is the last criterion in the BIC assessment for the first matter. The court, when looking into this criterion, emphasised on the perspective of the author’s independent creation and personalised expression. For the use of AI, BIC considered the assessment of this criterion on a case-by-case basis. In *Li v. Liu*, similar to the argumentation route when assessing “*intellectual achievement*” in this work, BIC also credited the efforts of the plaintiff. In particular, “*the process of adjustment and correction also reflects the plaintiff’s aesthetic choices and personalised judgments*”. To sum up, “*Spring Breeze Brings Tenderness*” fulfils the “*originality*” element.¹⁸⁹

Before reaching the conclusion in this first matter, the BIC elaborated more in this legal discussion, which is also noteworthy when drawing experience

¹⁸⁹ *Ibid.*

in the prism of EU law. Firstly, an aspect is to determine in this case is the (main) creator of such images. To answer this unclarity, a comparison is made between the relationship between the user and the GenAI tool versus a stereotype “work-for-hire” situation. In this case, the user of the GenAI tool can be seen as the commissioning party, and the tool is the commissioned side. However, the big difference is that unlike this interpersonal relationship, “*AI models do not have free will and are not the subjects of law*”. With this point of view, the human user is the main creator of AI-generated images. Another point that was elaborated by BIC brought back to the nature of copyright law. Throughout history, this regime has been created and maintained to encourage the creation of works; and such logic shall also be applied to AI-generated images. This would not only be beneficial and motivate creators; standing in the shoes of AI operators and this technology in general, safeguarding AI-generated images in the regime of copyright law will play a pivotal role supporting the development of AI. To wrap up this matter, “*AI-generated images, as long as they can reflect the original intellectual input of humans, should be confirmed as works and can be protected by copyright law*”.¹⁹⁰

Since the AI-generated image in the dispute has been considered to be copyrightable, BIC shall also assess other aspects of the concerned work. The first extended aspect is the owner of this rights attached to this image. According to the China Copyright Law, like the US, they only accept human authorship under the regime of copyright protection, so AI-tools like *Stable Diffusion* will not be considered as the author, or going further, the owner of the rights attached to AI-generated pictures. On the human contribution aspect to this work, there are two proposed routes. The first subject is the developers (or the providers) of *Stable Diffusion*. Following the logic of copyright law, as only granting rights for the work creators, BIC held that neither those entities could be considered as the author of this work because “*neither had the intent to create the subject picture nor did they actually participate in the subject picture creation process*”.¹⁹¹ Moreover, the designers of *Stable Diffusion* had provided a license for themselves not to claim any right related to the output from this AI-tool.¹⁹² On the other hand, aligning with the former arguments, BIC saw the main creator, as the decisive subject to for the result of this AI-generated image is Li. The image was created based on the plaintiff “*intellectual unput*” and reflected Li’s personalised expression. Consequently, it is the plaintiff who “*is the author of the image and enjoys the copyright in that image*”.¹⁹³

¹⁹⁰ *Ibid.*

¹⁹¹ S. Song, *China’s First Case on Copyrightability of AI-Generated Picture*, King & Wood Mallesons, 7 December 2023, <https://www.kwm.com/cn/en/insights/latest-thinking/china-s-first-case-on-copyrightability-of-ai-generated-picture.html>, retrieved on 21 April 2024.

¹⁹² *Ibid*, footnote no. 186.

¹⁹³ *Ibid.*

Unlike the US legislators or the MS legislators recently (which will be discussed later), BIC confirmed the copyrightability of AI-generated works, specifically images, with the similar mechanism as traditional photos or paintings. However, there is a small difference on how this protection mechanism shall work properly. Particularly, according to *the principle of good faith* and *the need to protect the right to know of the public*, the author of AI-generated works, or images specifically should clarify the use of this technology or the name of such AI model during the creation of such works.¹⁹⁴ This is also a resembling point with the judgment of court of Shenzhen in *Tencent*.¹⁹⁵ Why do Chinese legislators decided to change their opinion towards the copyrightability of AI-generated works, this will be further explained in the next part of this thesis.

The final point of this judgment is also the focal discussion that linked to the concern of the parties. It is whether the act of the defendant, would constitute a copyright law infringement under China Copyright Law. As BIC had concluded earlier, Li is the lawful human author and copyright owner of the illustration in dispute. The acts of the defendant, on her social media account (including *republishing without authorisation* and *deleting the watermark of the original picture*) are violations of copyright law and Liu should assume liability for such infringement. The liability determined by the court is similar to what the Applicant had requested – a public statement of apology and monetary compensation for losses.¹⁹⁶

4.2.4 Reasons for China’s legal choice and “potential-risks”

In this section, the thesis will further elaborate China copyright law, finding the reasons behind this legal choice. The following questions will be answered, based on the analysis of the legal scholars from this country:

- Why did China copyright law accept the possibility for this protection?
- What are the risks in such approach? Should China copyright law keep following this trend of argument?

As the preliminary point, Dai and Jin understood the decision of the Chinese courts from four different aspects. They can be formed as the four main reasons for the current China’s legal choice when dealing with the copyrightability of AI-generated works.¹⁹⁷

¹⁹⁴ *Ibid.*

¹⁹⁵ See Part 4.2.2.2, *Tencent case* .

¹⁹⁶ *Ibid*, footnote no. 186.

¹⁹⁷ *Ibid*, footnote no. 183.

The first notable point is about the Chinese legislators' perception *in terms of "human authorship"*. In *Zarya of the Dawn* or *A Recent to Paradise*, USCO and the US court have rejected copyright protection due to the lack of control when the human users involved in the creation of the image. When creating images through AI-based tools, like *Midjourney* or *Stable Diffusion*, the contribution of humans does "*not truly control the entire generation process*". The contribution of humans to the outcome of the images must be genuine for the resulting images to be recognised as copyrightable. This was also the logic shown in *Beijing Law Firm*, when BIC concluded the involvement of humans when using the AI tool to create The Judicial Report had not conveyed any original human expression. This approach was called the "*narrow interpretation*". The change shown in *Tencent* and *Li v. Liu* represented a new trend within the Chinese courts when assessing the standard of "human contribution" to grant copyright protection. The Chinese legal scholars explained the new approach in those later cases is a new way to perceive human participation in a work, called as "*broad interpretation*". The main difference in those two ways of assessment lies within their requirements. While the narrow one puts the emphasis more on the human element, on their control towards the creation of the work; on the other hand, the "*broad interpretation*" focuses on the human influence on creative activities. With this way of interpretation, the Chinese law is now accepting a lower threshold to grant the copyright protection for a work. More specifically, it is adequate to pass the condition to constitute a work in China Copyright Law even if the human involvement is only in the preparatory stage before the operation of the AI tool. This description resembles what actually happened for the contribution of human users on *Midjourney* or *Stable Diffusion*.¹⁹⁸

The second reason that leads to this new line of argumentation is claimed to link with the former one, describing as "a gap" in China copyright law. There has also been a heated debate on this topic, on *whether there should be a distinction between computer-assisted work or AI-generated works*. In *Zarya of the Dawn*, USCO reached the conclusion that AI-generated works would be different from computer-assisted works. Particularly, while using *Photoshop* to modify the final images is allowed, using GenAI tools, like *Midjourney* to create illustrations will not be copyright-protected. The reason for this can be linked with the recognition of "*human authorship*". Since the process of creating images on AI tools is unpredictable (and cannot be controlled) by human users, the copyright status of such works cannot be safeguarded. On the other hand, despite having different opinions, the judgments in China have reached the consensus that there is not any true distinction in these two scenarios.¹⁹⁹ Following

¹⁹⁸ *Ibid.*

¹⁹⁹ For example, there is an opinion from Professor Wang Qian, saying that AI does not have the ability for independent creation or making creative choices. See W. Qian,

this theory, we can assume that AI-generated works are no different from works created with the assistance of computer software and therefore copyrightable. For now, only Chinese courts, with judgements like *Tencent* or recently *Li v. Liu* applied this idea and the courts have received much support from the scholars and judges. The supporters believe that AI-generated images are actually the result of human creation, with AI technology assistance and the role of this technology shall not be overemphasised in this circumstance. However, in the opinion of Dai and Jin, they assumed this idea as “*too outdated or conservative*”, compared to what was considered as the “*innovative*” line of argument proposed in the US.²⁰⁰

Another reason for the decision of the Chinese courts to affirm the copyrightability of AI-generated works is their perception of one of the most basic perspectives of copyright law, *originality*. For a long time, China already adopted the standard of subjective originality. This would also be applied to most of the countries around the world, when dealing with copyright law. However, through the cases confirming the copyrightability of AI-generated works, we can see the Chinese courts have viewed this criterion in a less stringent approach. In *Tencent*, the court confirmed that the limited participation of the human users in the creation of AI-generated works through text prompts already reflected the “*the selection, judgement, and analysis of [the relevant content in that work]*”. For *Li v. Liu*, the work “*reflects [human] aesthetic choices and personalised judgements*”. This information may suggest that Chinese legislators have decided to take the other approach for the standard of originality. This led to the change of legal thinking of the court from the “*negative*” argumentation in *Beijing Film Law Firm* to the “*affirmative*” arguments as of today. It can also suggest that the Chinese courts have now supported to “*weaken... the requirement for human participation*” when it comes to the assessment of originality criterion. Favouring the objective standard test and focusing more on the nature of the works instead of the creators are now turning China to become the pioneer in protecting copyright for AI-generated works; the road which no country has ever chosen before.²⁰¹

The root cause of this result is claimed to lie within the special theory of China copyright law. Looking back to the history of copyright law, there are two distinct ideological flows, as (i) *the author's right system*, originated in France and commonly adopted in civil countries, with a great emphasis on the protection of the authors as reflected in its name. The other system is (ii) *the copyright system*, created by the UK and therefore, now being used by the common law countries. Different from the author's

The Qualification of Content Generated by Artificial Intelligence in Copyright Law, Science of Law, No. 5, 2017, pp. 151 – 152 in *ibid*.

²⁰⁰ *Ibid*, footnote no. 183.

²⁰¹ *Ibid*.

right system, it would rather prioritise the public interest.²⁰² The system applied in China is rather an exceptional one, which has often been ignored in this discussion, namely *the work right system*. It is not hard to wrap-up how this system operates, since it is a “hybrid” one, as a combination of the aforementioned systems. However, if you put the idea of protecting the author’s right and the public interest on the scale and compare, the Chinese legislators would prefer to choose the latter one as the main basis for copyright protection for a work. With this thinking, when it comes to the assessment of copyright protection for AI-generated works, or images specifically, “*human contribution*” is in a less important position.²⁰³

Lastly, one of the points worth mentioning for the China’s legal choice regarding this discussion is about the policy that Chinese legislators have chosen when dealing with AI-related matters. As aforementioned in Part 2.3.3, China has adopted legal documents to show their ambitions, turning this country to become the global leader in the field of AI. Aligning with this direction, it is understandable that China is now taking the legal choice to facilitate that goal. In an interview with Z. Lingjun, a judge in *Tencent*, he explained the judgement “*is in line with the legislative purpose of China’s copyright law*” as to encourage creation. In the current context, with the development of AI, this line of judgement would concrete the orientation of the government towards this technology. Allowing copyright protection to AI-generated works, with the limited human involvement through prompts would motivate people to use AI to conduct creative activities and produce more works. When AI becomes more and more popular since there are more frequent users, it will boost the development of this AI industry, which is the ultimate goal of the government and legislators when dealing this matter.²⁰⁴ In an article, Zhang also suggested the Chinese legislators have chosen to follow this policy to create a business and industry-friendly environment in the field of AI. With this policy choice, it would bring many benefits to China. Looking at the pro-economic or pro-technology point of view, this would be a step taken to encourage the development of AI and make it become popular for public use. Compared to the route taken by the US legislators (and the MS in the EU as illustrated in Part 5), it would create a competitive advantage in the AI technology domestic market for the Chinese firms. Throughout this assessment, maybe this is exactly the intention of the legislators, as well

²⁰² See A. Lucas, A. Lucas-Schloetter and C. Bernault, *Traité de la propriété littéraire et artistique (5^e édition)*, LexisNexis, 2017, p. 43. For MS, they also follow these two traditions. While they are mostly pursuing the author’s right systems as civil law countries, there are still common law tradition countries that adhere to the copyright system.

²⁰³ *Ibid.*, footnote no. 183.

²⁰⁴ See T. Yuzhuang, *The first case to identify articles generated by AI as a work was ranked among the top ten cases of people’s courts in China in 2020*, 13 January 2021, Duteneews, <https://www.duteneews.com/n/article/1194777>, retrieved on 24 April 2024 in *ibid.*

as the practitioners in China, to prioritise the development of AI, not only in the specific legislative documents specialised for this technology, but also in related fields.²⁰⁵

There are persuasive points listed out by Chinese courts and legislators for the current choice with the copyrightability of AI-generated works, as demonstrated in the previous paragraphs. With the affirmation in *Li v. Liu*, in my opinion, the confirmation on the protection towards such works is not an exceptional case. This is the route Chia has decided to take for the sake of AI development and ensuring public interest in copyright law. According to Dai and Jin, China for now would most likely continue with this route, when the Supreme People's Court included *Tencent* as one of the model IP cases in 2020, as a reference for lower-level courts when dealing with similar circumstances.²⁰⁶

On the other hand, those scholars have also shown uncertainty answering whether this route will be the most appropriate solution for this legal discussion. Without clear indication, Zhe and Dai expressed the opposition towards the copyrightability towards AI-generated works. The scholars explained the key difference that resulted in notable judgements in China is due to the different understanding of the legislators and judges for computer-assisted works and AI-generated works. While *Tencent* see no difference in the nature of such works, some legal scholars in this country, or decisions from other countries (like *Zarya of the Dawn*) do not believe so. They suggest the legal experts shall do more research and improve their knowledge, specifically on the nature of AI. Once they “master” how this technology works, there is a possibility for a distinction on the copyrightability between AI-generated works and computer-assisted works (similar to the argument illustrated in *Zarya of the Dawn*). With this distinction, another probable scenario would be that the possibility to protect the copyright status of AI-generated works may also be overturned, to its “original” state.²⁰⁷ He, a lecturer from the University of Hong Kong also saw many “flaws” in the judgement of *Li v. Liu*.²⁰⁸ His article somehow had the same idea with this thesis, analysing the arguments in the recently published judgment from China and made a comparison to the former cases in the US to see the distinction in the argument lines of these two jurisdictions. After the assessment in many perspectives, He advised that giving the copyrightability status to AI-generated image to the human users as the authors of such works maybe more problematic that it seems, and it would bring negative impacts towards the legal systems, especially

²⁰⁵ A. H. Zhang, *The Promise and Perils of China's Regulation of Artificial Intelligence*, 25 March 2024, <https://ssrn.com/abstract=4708676>, retrieved on 18 May 2024.

²⁰⁶ *Ibid*, footnote no. 183.

²⁰⁷ *Ibid*.

²⁰⁸ See the arguments in detail at T. He, *AI Originality Revisited: Can We Prompt Copyright over AI-Generated Pictures?*, GRUR International, Vol. 73, Issue 4, Oxford University Press, April 2024, pp. 299 – 307.

in the field of IP law. Standing in the shoes of the courts in *Tencent or Li v. Liu*, there is a risk that “*everyone can be an author*”. The courts would then have to deal with complex issues and a huge number of caseloads related to this matter. Although he does not support the idea to make AI-generated works copyrightable, it does not mean He would want such works left unprotected and the relationship concerned became ungoverned by the law. Instead, he proposed another solution, since the answer to solve this legal relationship would potentially affect a various number of interests groups. In particular, “*it would be preferable for legislators to... [discuss] with the stakeholders to develop a... regulatory plan... not necessarily have to revolve around copyright*. Zhang also reached this mutual conclusion in her article. To be specific, the positive benefits that the current approach would bring to the AI industry in China, when dealing with the copyrightability of AI-generated works would occur in a short term. Moreover, such benefits would only be limited in the domestic territory, applying solely in the China legal framework. On the contrary, the risks when taking this approach can also be seen as worth in consideration. The Chinese firms, who are encouraged to develop AI technology (in copyright law) will need to adapt to a new scenario, where those advantages will be diminished on the foreign markets. Aligning the idea of He, opening the door for copyright protection would lead to the inevitable revision “*of existing copyright laws and doctrines by Chinese courts and the [concerned] legislature*”. To avoid any inconvenience, there should be “*a pressing need for international cooperation to address the deficiencies in domestic institutions*”.²⁰⁹

Just like what is happening in the US, with the development of AI, the legislators, the scholars or even the public is paying more attention to the stories of AI and related topics, including the copyright for AI-generated works (or images in specific). For now, it is better for all of the entities to get to know the nature of this technology, on how it could create works. The legislators, in the help of the people who are working in academia, or the AI experts, shall find the appropriate conclusion on this process, or what is the involvement of human in this process through the input prompts. From this foundation, the next step is to determine would it be adequate creativity from such contribution to grant the copyright protection for those works to the human users. Up to this point in the thesis, there has not been unified for this legal matter, and we still need more time to govern for any notable amendment. However, through the legal stories of China (and the US), they are the precious experience for the EU legal scholars and legislators to deal with the concerned matter, in the time where AI and its new branch of development (like GenAI) will be more easily accessible and become a common thing in the near future.

²⁰⁹ *Ibid*, footnote no. 205.

5 Current route for EU copyright protection for AI-generated images

With the formal adoption of the AI Act, this has become the first official legal document in the world that is specialised in the field of AI. This shows the ambitions of the EU institutions, and the MS, “*boosting innovation and establishing Europe as a leader in the field*” of AI.²¹⁰ To make this target into reality, efforts will be made to make EU become a “friendly market” for both the operators and the users in AI technology. Having a clear answer towards the copyright protection towards AI-generated works will be one of the cornerstones to facilitate such market. In this part, the thesis will demonstrate (1) what MS are doing to safeguard the copyright protection towards AI-generated images and their opinions towards this legal relationship and (2) the possibility to apply the current EU legal framework on how to deal with this matter. Due to the lack of an official answer to the research question within EU law, the thesis would like to propose different routes that the EU legislators may take, learning from MS when it comes to the copyright protection for AI-generated works with prompts inputs, including images.

5.1 The action of the MS

Considering a legal matter within EU does not only lie within the documents adopted by the EU institutions or the judgments from CJEU. It is also the national legislation of the MS, coming as a reliable source of information to give the complete overview on a legal matter within the Union. This logic can also be applied to the relationship between AI-generated images and copyright law. The AI Act has considered as the first big step of the legislators at the EU level to govern this new technology field, however, there is one country that had some significant actions on this topic even earlier. That country is France.

As mentioned in the former part of the thesis, *The Next Rembrandt* is a notable event in the field of generative art, which has also brought attention to the discussion of copyright protection towards such works.²¹¹ The French legislators have also started to have serious attention to this discussion from this event. In their opinion, copyright law needs to have a mechanism to protect the authors and creative artist “in accordance with a humanist principle, in legal agreement with the Code of Intellectual Property”, or to find a solution to minimise the risks posed by the capability of the AI tools to create artworks.²¹² In September 2023, French National Assembly considered a new draft version of the Code of Intellectual Property (“**France IP Code**”), having

²¹⁰ *Ibid*, footnote no. 72.

²¹¹ See Part 2.2, *The history of AI (or GenAI) generating images*.

²¹² K. Bercimuelle-Chamot, *French Copyright framework for artificial intelligence: a half-hearted attempt*, IPKat Blog, 16 October 2023, <https://ipkitten.blogspot.com/2023/10/french-copyright-framework-for.html>, retrieved on 9 April 2024.

notable points for works created by AI. According to this draft, the integration of copyrighted works into the database of AI software must comply with the provisions within France IP Code; the exploitation of such works must be authorised by the author or the rightful owner of those works.²¹³

Moreover, the French collecting societies is now allowed to protect the rights for works created by AI. What is more notable about these new provisions, when discussing the protection for AI-generated works is that, *for the benefit of the authors or beneficiaries of the works used to create the artificial works; in cases where the works are created by an AI without direct human intervention, they can be copyright-protected.*²¹⁴ To comply with the law, such works must indicate that they are “*works generated by AI*” in the name of the authors, along with other human creators. Lastly, the France IP Code set up a tax system for the AI systems operators to pay whenever they use copyrighted works to guarantee the benefit of a collective management organisation for works whose origin cannot be determined. This mechanism would also encourage the artists to have more new creative works.²¹⁵

The fact that legislators in France, in the field of copyright law, are trying their best to get their regulations “catching up with” the fast-paced development of technology is a good sign. However, from the new provision in this new draft version of France IP Code, there are still problems arising from the law. The first problem can be seen in the provisions regarding the tax charges against the AI system operators for the use of copyrighted works. This provision has not indicated how this tax mechanism would work, or the desirable tax rate (or tax value) that the legislators would charge for each use of the copyrighted works. In my opinion, it would be more reasonable to include such provision into a document in the field of tax law, rather than IP law. Another important matter left unanswered would concern the compliance of including AI in the author section of the work. Questions will be asked, for instance (1) what will be the duration for the copyright protection with the involvement of AI; (2) are the exceptions for this protection (like the case of *quotation*, the use of *parody* works) be applied the same as works created by humans; or (3) whether idea of human authorship not being an obligatory criterion in France copyright law, will it be compatible with EU copyright law. Although the aforementioned provisions are not the final, we can still see this as a good source of reference in AI governance in the whole EU, specifically in the field of copyright law.

²¹³ Article L131-3 France Code of Intellectual Property, draft version proposed on 12 September 2023.

²¹⁴ *Ibid.*, Article L321-2.

²¹⁵ *Ibid.*, Article L121-2.

Spain is also a country that is very eager towards the AI topic. In 2022, the Spanish government proposed a program called *España Digital 2026*, following the strategy of *European Digital Decade*.²¹⁶ To execute this program, Spanish government has introduced 10 policy levers, 30 components and more than 200 measures, one of them is the National Artificial Intelligence Strategy (ENIA). This measure aims to facilitate the scientific research, technological development, and innovation in every perspective of AI. There have also been plans to set up a framework for ethical and legislative standards to reinforce the protection of individuals and collective rights, ensuring the idea of social inclusion and welfare.²¹⁷ The Spanish legal framework also has the goal to develop this technology to comply with the existing laws in the field of data privacy.²¹⁸ To monitor the implementation of the policies, an independent agency of the Spanish government was established, named as the *Spanish Artificial Intelligence Supervisory Agency* (AEISA). With the foundation of this authority, many efforts have been made to turn this country into a model of legal sandbox before the entry into force of the EU AI Act. This sandbox will create a controlled environment for innovators and regulators in the field of AI to facilitate the development of this technology, on the other hand, experimenting to see the compatibility of the AI systems towards the proposed AI Act.²¹⁹ Despite having a kind-of transparent strategy for the development of AI technology, there has not been any law provision to specifically govern the copyright protection towards AI-generated works (or specifically images). According to current the Spain Intellectual Property Act, AI is not recognised as the lawful author. Works created by AI do not fall under the scope of protection in the Spanish copyright law regime.²²⁰

The most recent notable event in the EU national law level about the legal discussion for copyright protection towards AI-generated works occurred in the Czech Republic. This is also considered to be the first court judgment in the EU about this matter. In this story, the Applicant used *DALL-E*, an AI model specialised in generating images, through the input prompts. These illustrations were later put on the website of the Applicant. The Defendant of this case, after that, got those pictures without any authorization or permission

²¹⁶ In 2021, the Commission introduced a vision to set out the foundations for Europe's digital transformation to 2030 focusing on the field of public services or infrastructure of the region. See more in *EU's Digital Strategy*, *España Digital 2026*, <https://espanadigital.gob.es/en/estrategia-digital-de-la-ue>, retrieved on 9 April 2024.

²¹⁷ *Digital Spain Development*, *España Digital 2026*, <https://espanadigital.gob.es/en/implementation-agenda>, 27 June 2022, retrieved on 9 April 2024.

²¹⁸ See more about the policy in AI adopted by the Spain government in *AI Watch - Spain AI Strategy Report*, European Commission, https://ai-watch.ec.europa.eu/countries/spain/spain-ai-strategy-report_en#regulation, retrieved on 9 April 2024.

²¹⁹ DIGIBYTE, *First regulatory sandbox on Artificial Intelligence presented*, European Commission, 27 June 2022, <https://digital-strategy.ec.europa.eu/en/news/first-regulatory-sandbox-artificial-intelligence-presented>, retrieved on 10 April 2024.

²²⁰ As stated in Article 5 Spain Intellectual Property Act (1996), authors are individuals who create literary, artistic or scientific works. With this provision, in my opinion, it is already indicated that human authorship is a requirement for copyright protection in Spain.

of the Applicant and put on their websites. The Applicant brought the dispute between the parties up to the Municipal Court of Prague, claiming for an infringement of copyright law. In the judgment, the court in Prague identified the core legal issue of this dispute is the authorship of the images; specifically, whether AI can be recognised as an author in Czech Republic copyright law. According to this national copyright law, similar to Spain IP Act, only accepts authors as natural persons.²²¹ However, to safeguard the rights of the Applicant, this party argued the court to affirm the author status to the Applicant, for the images generated by a GenAI tool due to the Applicant contribution to the creation of such images through “prompts”. The court rejected this line of argument, saying the contribution in the former claim is not the “creative activity of a natural person” as demonstrated in the Czech Republic Copyright Act. The Applicant, in the claim, had also not clearly indicated any other element to prove its contribution to create the images on *DALL-E* that would constitute adequate “creativity”. In conclusion, the request put up by the Applicant was rejected by the court in Prague, and for now, images generated by AI is not copyrightable according to the law of Czech Republic.²²²

Throughout such examples, there are inconsistencies about the answer for copyright protection towards works created by AI. There are pioneers like France (to adopt new regulations), however in most of the MS, they are similar to Spain, with this question left unanswered. With the AI Act coming into force soon, and the risks during the use of AI is more aware; it is important for the MS and EU institutions to find a solution (through a legal document or an additional provision in the existing legal framework) to address this issue as soon as possible. Another route to take is to rely on the EU Courts (with both the national courts and courts of CJEU) to issue judgements to solve this unclarity of uniformly, once and for all.

5.2 Application from the current EU law framework – What should be next?

As previously mentioned, there has not been any official legal document from the EU institutions or any caselaw from CJEU to answer the possibility of copyright protection for AI-generated images. However, there has been some initial information to draw us the route that the EU institutions or CJEU might take when it comes to the discussion of copyright protection for AI-generated images. Such information will be demonstrated in the following paragraphs.

Due to the novelty of AI, the discussion about AI-generated images, or looking more broadly, AI-generated works, is only at the initial stage. The EU legislators have only started to make statements regarding the relationship

²²¹ According to Article 5(1) Czech Republic Copyright Act 2000, amended in 2006.

²²² A. Cerri, *Czech court finds that AI tool DALL-E cannot be the author of a copyright work*, IPKat Blog, 15 April 2024, <https://ipkitten.blogspot.com/2024/04/czech-court-finds-that-ai-tool-dall-e.html>, retrieved on 15 April 2024.

between copyright law and AI technology, going along with the discussion of the EU AI Act. For example, copyright protection is recognised as a core issue to actively keep in check in the regulations for AI, in the draft version of AI Act in 2023 to react with the rise of GenAI chatbots earlier that year.²²³ Despite not being an official document for EU law, in one article published by the Commission, it is explicitly stated that: “*under European (and US) law AI cannot own copyright, as it cannot be recognised as an author and does not have the legal personality which is a pre-requisite for owning (intangible) assets*”.²²⁴ With this statement, it can be implied that EU copyright will follow the same route of the US law in *Zarya of the Dawn* or *A Recent Entrance to Paradise*, reject the copyrightability of AI-generated images due to the lack of legal capacity of AI. However, in such statement, the Commission had not cited any legal basis, caselaw or any concredited evidence to support this argument. In additional, this article would only be considered as reference source for the answer of EU law, rather than an official source like legal documents or the Commission guidance for example in competition law.

The European Parliament, on the contrary, decided to propose another route for a story of AI-generated works (which would include AI-generated images) and copyright law. Tracing back earlier, this proposal was made right after the adoption of the AI White Paper, discussing the role of IPRs in the time of AI technology. More specifically, the members of the Parliament proposed some solutions for the legislators to consider for a harmonised answer to govern this legal relationship at the EU level. When there has not been any official solution to resolve this riddle, on the role of human prompts, or how the creativity process on AI tools should be viewed, this can be worth considering as a reference source. This proposal could summarised up as follows:²²⁵

- There will be negative impacts if the legislators seek to grant the legal capacity for AI tools, when looking in the perspective of encouraging the creation of human artists/creators (as the key nature of copyright law).
- There should be a distinguishment between AI-generated works and AI-assisted works. For copyright law, they should focus on AI-generated works, since this type of works is the main regulatory concern; for the situation of AI-assisted works, the current copyright framework is still applicable.
- AI-generated works must be protected under copyright legal framework to encourage investment in this method; it would also ensure

²²³ *Ibid*, footnote no. 70.

²²⁴ *Intellectual Property in ChatGPT*, IP Helpdesk – European Commission, 20 February 2023, https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/intellectual-property-chatgpt-2023-02-20_en, retrieved 2 May 2024.

²²⁵ See Resolution of the European Parliament of 20 October 2020 on intellectual property rights for the development of artificial intelligence technologies, (2020/2015(INI)).

legal certainty to the concerned parties. However, this claim must be assessed thoroughly, considering the *principle of originality* and the concept of “*intellectual creation*”. In the opinion of the European Parliament, the view of the creators towards those criteria would only address the personality of the author and link to natural persons. Therefore, with this line of argument AI-generated works only through the human inputs as text prompts are not copyrightable.

- However, in the case the copyrightability of AI-generated works is considered as affirmative, the ownership of the rights should only be assigned to the natural or legal persons that created the work lawfully.

From this opinion, the European Parliament has not given a proper conclusion on the legal answer for the copyright protection towards AI-generated works. As analysed by H. M. Böhler, there are four different scenarios to assess this legal relationship, with the respective answer for copyright protection to each of such scenario.²²⁶

The first one would occur when this is an *AI-assisted work*; for instance, the use of the co-pilot feature on *Adobe Photoshop* to modify the tone of the colours in your photos. In this scenario, it is a mutual agreement between the scholars and the European Parliament that it is still applicable within the current EU copyright framework, in the case of co-production. The use of the AI-tool can be seen as a resemblance to computer software, like *Microsoft Word*, to express the human author’s expression and originality. Going further, even when the human contribution is minimal, the work is still protectable.²²⁷

The next scenario would be similar to the story of *Zarya of the Dawn*, which is the works created with the use of AI tools, but *ultimately selected by a human in the part which are “valuable and worthy of contribution”*. For this circumstance, USCO agreed to grant copyright protection to the human author since she is the sole contributor to the specific elements in that work, particularly “*the selection and arrangement of texts and images in the comic book*”, in the concept of “*compilation*”. For the case of EU law, applying the logic that CJEU used in *Infopaq*, a work that is AI-created, yet selected by human can still be copyrightable since such selection constitute “*the expression of the intellectual creation*” and ultimately pass the originality test.

The last scenario would lead to the rejection of copyrightability, when there is *no human contribution to this work*. In this case, it is the AI systems that

²²⁶ H. M Böhler, *EU copyright protection of works created by artificial intelligence systems*, The University of Bergen, 2017, <https://hdl.handle.net/1956/16479>, retrieved on 3 May 2024.

²²⁷ *Ibid*, footnote no. 59.

are fully autonomous to generate the creative works, with humans not involving in any step in the creative process. With these types of work, since there is no human involvement, there would be a lack of creativity in the test of “*originality*” and therefore, the copyright protection will be rejected.

If following the route described above, for an entity/or a human user to seek for the copyright protection to an AI-generated images, they must prove that they have put the minimal effort during the creation of such work, that is adequate to pass the originality test. For now, we do not know if the human prompts in text, that are the sole contribution of the human in the creation process of AI-generated works would constitute adequate “*originality*” or “*creativity*” for the copyright assessment in EU law; however, with the aforementioned information, it can be indicated that such argument can be proven as affirmative from the view of EU legislators, although human is not the main contributor to such images. Allowing the copyrightability of AI-generated images, only by the human text contribution would also align with the idea in the Chinese court in *Li v. Liu*, and more importantly the EU legislators in the AI White Paper, encouraging the development of AI within the Union.

However, on the other side of the coin, there is a possibility as described earlier by He about the risks the EU courts will face if they decide to consider the human participation for a copyrighted image with a low threshold in originality, which lead to the scenario of “*everyone can be an author*”; and later there is a possibility for the court to face against an unprecedented number of disputes in the field of IP law, regarding this AI subject-matters. Despite such drawbacks, in my opinion, the idea of AI-generated images, or AI-generated works in general become unprotected and would fall into the “public domain” doctrine will not be beneficial, and more severely, would bring damages to all of the parties concerned. The court, or the competent authority cannot control the creation, the content or the use of the public domain works; the users would be discourage to use AI technology for creation and make AI less popular in public use, which would potentially lead the decrease number of users in GenAI tools, which will bring down the revenue for developers, and make this technology less friendly-innovative.

In my opinion, the legal relationship between AI-generated images and copyright protection shall be answered in affirmative. For the human contribution in the creation process on the GenAI tools, even though they are only text prompts, shall be considered as adequate to pass the originality test. This line of argument can be seen as a contradictory idea to what has been done in the US, or the recently published judgment in Czech Republic however, with this position, this would be the answer that would maintain the stability and the certainty in EU legal system, especially in the field of copyright law. There can be counter arguments saying that the affirmation of this protection will be a landmark change in copyright law, especially in the perception of law towards the originality criterion since it would lead to the decreasing role of

human participation. However, it would suit the story of our world today, when there would be less requirement for humans to create an artistic work, with the help of AI. Moreover, the protectability of copyright law towards AI-generated works will be a notable driving force to the development of AI technology, which are following the idea of EU legislators on this technology and compatible with the soon-into-force AI Act.

Elaborating more, there are still questionable matters need to be resolve in this discussion. Those unclarities can be listed as, (i) who is the author and (ii) who would be the right owners attach to such works. If they are copyrightable, and AI is seen as the author of the works, what will be the duration of protection for such works; or will AI-generated images be subject to the exception of copyright law, for example the case of “*parody use*” or the use for the purpose of research and education. To fully answer such unclarities, there will be many more efforts in the future required from the EU legislators to make it flow, and we shall need more time for the proper solution to solve the aforementioned questions in the story of EU law.

6 Conclusion and remarks

70 years is not a long time for a history timeline, however, with the fast-paced evolution of technology, significant events have happened that changed this industry in a good way. For now, developers, researchers and users still cannot fully master the capability of AI, instead gradually having new discoveries about it. From the legal perspective, to deliver the most efficient solution, the legislators will need to monitor AI in a comprehensive way to have a some-how-appropriate answer towards the governance of technology. The argument made by the lecturers in Stanford University also reflected this idea:

*“Government cannot govern AI, if government doesn’t understand AI”.*²²⁸

Looking into the solutions for the relationship between AI-generated images and copyright law, there are two clear paths to follow. The first one, I would like to call it the “traditional” or “classic” path, which would apply the copyright assessment like the way it has been. In this path, originality, or in another perspective, the human participation or “human authorship” would be seen as the key factor to the final answer. According to the judgements in the US and Czech Republic, the copyrightability of AI-generated images will be rejected since it cannot pass the originality test, due to the lack of human authorship. However, in my opinion, this would not be the preferable choice to govern this legal relationship since it would potentially create new problems and negative impacts on the parties concerned in this story (the authority in copyright law, the creators and the developers of the GenAI tool).

The other path, as a “flexible” or “innovative” perception, would weaken the threshold of human authorship, or the human participation for the assessment of a copyrighted image. With this line of argument, it is adequate for the sole human contribution through text prompts, in the creation process of AI-generated images, to satisfy the requirement of the originality test. Following the experience from the Chinese courts, consequently, the author (also considered as the right owner) of this work will be attributed to the user of the GenAI tools, as the one who put the prompts into this tool to generate the results as illustrations. With this argumentation, many targets would be achieved proportionately. In the perspective of copyright law, there will be no need of any reform for the criteria of copyright protection assessment; and somehow, in the end, there will be no distinction between computer-assisted works and AI-generated works when it comes to copyright protection. Another perspective to look at is parties concerned in this relationship. Affirmative in the governance of AI-generate images, or other AI-created works in general, would not

²²⁸ Statement made by D. Ho, W. B. Scott and Luna M. Scott Professor of Law, Stanford Law School in T. Weber, *Artificial Intelligence and the Law – Legal Scholars on the Potential for Innovation and Upheaval*, Stanford Lawyer Magazine, Issue 109, Stanford Law School, Fall 2023.

only facilitate the copyright (or IP) authorities within EU law; it would facilitate the EU courts to solve disputes concerning such works. Finally, standing in the shoes of the creators of the images (as the users of GenAI tools), the users (or consumers) of such images, setting up a safeguard legal mechanism for this new type of creation would ascertain legitimate expectation and legal certainty when it comes to this type of work specifically, and looking broader, the legal field in AI and copyright. This is exactly what the EU legislators are looking for when establishing the legal framework for AI technology, and it would also meet the expectation of the developers, or operators of AI tools to encourage the development of this technology.

However, this will not be the ultimate answer for the research questions in this thesis. With the fast-paced evolution of AI technology, we shall expect a lot more changes on how this technology works, include how it could generate works soon. Following this statement, in my opinion, the EU legislators, and others around the world should do more research to have the proper knowledge on AI to see how it works. The result of the final version of the AI Act will be the reflection of the former point in the scope of EU law. There shall be more time for the discussions, or seminars to find the suitable solution for the research questions of this master thesis. And there will be much more time needed for a mutual conclusion for this matter. To achieve such target, the help of the experts in the field of IP, AI, both in the legal or technical perspectives will be very helpful. Other entities, specifically the ones that are directly concerned to this relationship, as this case the AI tool users, or the operators and the developers of the AI (or GenAI tools) would also bring up interesting solutions for this discussion. To support this argument, as mentioned in the previous parts of this thesis, many reputable scholars in different jurisdictions (particularly the China and the US) reached the mutual conclusion that there shall be an international cooperation to have a general mechanism to deal with existing deficiencies in the current copyright law framework. For now, there have been initial international discussions and agreements about AI-related matters, even particularly in the field of copyright law.²²⁹ This effort can be seen as an extension of the international harmonisation in this legal field, which would bring benefits to all of the party concerned in this legal relationship, but reaching a proper answer for the copyright protection for AI-generated artworks (or other types of AI-generated results in general) is still a long way to go.

²²⁹ In March 2024, the United Nations adopted a landmark on AI. See *Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development* (A/78/L.49), United Nations, 11 March 2024. In the field of copyright law, WIPO also hosted seminars to discuss about the impact of new technology in the field of copyright law, see for example *WIPO Conversation on Intellectual Property (IP) and Frontier Technology (Sixth Session)*, World Intellectual Property Organisation, 21-22 September 2022, https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf, retrieved on 19 May 2024.

In conclusion, through the assessment in different jurisdictions, this thesis would like to propose that, in the case where a novel technology, like AI, brings out unprecedented legal discussions that is linked to this concept, with non-traditional impacts, it requires a non-traditional approach to properly deal with such matters. This would also be applied in the discussion in respect of AI-generated artworks, and the copyright law, where the protection for such works shall be answered as affirmative.

Bibliography

PRIMARY SOURCES

EU LEGISLATION

Charter of Fundamental Rights of the European Union *OJ C 202/02*, 2016.

Consolidated version of the Treaty on European Union *OJ C 202/01*, 2016.

Consolidated version of the Treaty on the Functioning of the European Union *OJ C 202/01*, 2016.

Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts *2021/0106(COD)*, 2024.

Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs.

Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society amended by Directive (EU) 2017/1564 of 13 September 2017 and Directive (EU) 2019/790 of 17 April 2019.

Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC.

Resolution of the European Parliament of 20 October 2020 on intellectual property rights for the development of artificial intelligence technologies, *(2020/2015(INI))*.

LEGISLATION FROM OTHER JURISDICTIONS

International Instruments

Berne Convention for the Protection of Literary and Artistic Works (Paris Act), World Intellectual Property Organisation, 1979.

Agreement on Trade-Related Aspects of Intellectual Property Rights, World Trade Organisation, 1994.

World Intellectual Property Organisation Copyright Treaty, World Intellectual Property Organisation, 1996.

Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks, World Intellectual Property Organisation, 2007.

Hiroshima Process International Code of Conduct for Organizations Developing Advanced AI Systems, G7, 2023.

Hiroshima Process International Guiding Principles for Organizations Developing Advanced AI Systems, G7, 2023.

Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development (A/78/L.49), United Nations, 11 March 2024

China

Copyright Law of the People's Republic of China, 2010. See https://english.www.gov.cn/archive/laws_regulations/2014/08/23/content_281474982987430.htm, retrieved on 10 April 2024.

Notice on the Issuance of the New Generation Artificial Intelligence Development Plan, China's State Council, July 2017. See translation at <https://digichina.stanford.edu/work/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>, retrieved on 12 March 2024.

China Personal Information Protection Law, 2021. See translation at <https://digichina.stanford.edu/work/translation-personal-information-protection-law-of-the-peoples-republic-of-china-effective-nov-1-2021/>, retrieved on 12 March 2024.

The United States

The United States Copyright Act, 1976.

Compendium of USCO Practices (3rd edition), The United States Copyright Office, 2021.

Algorithmic Accountability Act, draft version, The United States Congress, 2022.

Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, The White House, 30 October 2023.

Other Jurisdictions

Swedish Copyright Act, Sweden, 1960.

Spain Intellectual Property Act, Spain, 1996.

Czech Republic Copyright Act, Czech Republic, 2006.

France Code of Intellectual Property, France, draft version on 12 September 2023.

SECONDARY SOURCES

BOOKS

A. Kur, T. Drier, S. Luginbühl, *European Intellectual Property Law (2nd edition)*, Edward Elgar Publishing, 2019.

A. Lucas, A. Lucas-Schloetter and C. Bernault, *Traité de la propriété littéraire et artistique (5^e édition)*, LexisNexis, 2017.

B. van Klink and S. Taekema (eds.), *Law and Method Interdisciplinary Research into Law*, Mohr Siebeck, Tübingen, 2011.

H. Boshier, E. Rosati (eds), *Developments and Directions in Intellectual Property Law - 20 Years of The IPKat*, Oxford University Press, 2023.

J. Pila and P. Torremans, *European Intellectual Property Law (2nd edition)*, Oxford University Press, 2019.

P. de Cruz, *Comparative Law in a Changing World (2nd edition)*, Cavendish Publishing Limited, 1999.

P. I. Bhat, *Idea and Methods of Legal Research*, Oxford University Press, 2018.

Q. Sanqiang, *Intellectual Property in China*, Wolters Kluwer, 2012.

S. Russel, P. Norvig, *Artificial Intelligence: A Modern Approach (4th edition)*, Pearson, 2021.

T. Tridimas, *The General Principles of EU Law (2nd edition)*, Oxford EC Law Library, 2007.

Y. Guo, *Modern China's Copyright Law and Practice*, Springer, 2017.

JOURNAL ARTICLES / ACADEMIC PAPERS

A. Elgammal, *AI Is Blurring the Definition of Artist*, American Scientist, Vol. 107, No. 1, Sigma Xi, 2019.

A. H. Zhang, *The Promise and Perils of China's Regulation of Artificial Intelligence*, 25 March 2024, <https://ssrn.com/abstract=4708676>, retrieved on 18 May 2024.

A. M. Turing, *Computing Machinery and Intelligence*, Mind, Vol. 59, Issue 236, Oxford University Press, October 1950.

A. Winegar, *Protecting "The Next Rembrandt": Evaluating Artificial Intelligence's Relationship with Copyright Law*, Chicago-Kent Journal of Intellectual Property, 26 January 2018, <https://studentorgs.kentlaw.iit.edu/ckjip/protecting-next-rembrandt-evaluating-artificial-intelligences-relationship-copy-right-law/>, retrieved on 17 March 2024.

C. Watiktinnakorn, J. Seesai and C. Kerdvibulvech, *Blurring the lines: how AI is redefining artistic ownership and copyright*, Discovery Artificial Intelligence, Vol. 3, No. 37, Springer, 2023.

E. Hubert, *Artificial Intelligence and Copyright Law in a European context - A study on the protection of works produced by AI-systems*, Lund University Publication, 2020.

G. Greenfield, *When the machine made art: the troubled history of computer art*, Journal of Mathematics and the Arts, Vol. 9, Issue 1-2, Taylor & Francis, 2015.

G. H. Pike, *An Update on Orphan Works*, Information Today, Vol. 24, Issue 7, 2007, <https://ssrn.com/abstract=1408209>, retrieved on 30 April 2024.

H. M Böhler, *EU copyright protection of works created by artificial intelligence systems*, The University of Bergen, 2017, <https://hdl.handle.net/1956/16479>, retrieved on 3 May 2024.

J. Fjeld and M. Kortz, *A Legal Anatomy of AI-generated Art: Part I*, The Harvard Journal of Law and Technology (JOLT), 21 November 2017, <https://jolt.law.harvard.edu/digest/a-legal-anatomy-of-ai-generated-art-part-i>, retrieved on 10 March 2024.

J. McCarthy, M. L. Minsky, N. Rochester and C. E. Shannon, *A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence, August 31, 1955*, AI Magazine, Vol. 27, No. 4, Association for the Advancement of Artificial Intelligence (AAAI), 2006.

J. M. Smits, *What is legal doctrine? On the aims and methods of legal-dogmatic research*, in R. van Gestel, H. Micklitz and E. L. Rubin, *Rethinking Legal Scholarship: A Transatlantic Dialogue*, Cambridge University Press, 2017.

K. Hristov, *Artificial Intelligence and the Copyright Survey*, Journal of Science Policy & Governance, Vol. 3, Issue 1, Harvard GSAS Science Policy Group, April 2020.

L. Saouma and Others, *A Comparative Framework for AI Regulatory Policy*, The Montreal International Centre of Expertise in Artificial Intelligence (CEIMIA), February 2023, <https://ceimia.org/wp-content/uploads/2023/05/a-comparative-framework-for-ai-regulatory-policy.pdf>, retrieved on 12 March 2024.

M. A. Lemley, *How Generative AI Turns Copyright Upside Down*, Science & Technology Law Review, Vol. XXV, Columbia Law School, Spring 2024.

M. Jovanovic, *The originality requirement in EU and US, different approaches and implementation in practice*, European Communities Trademark Association (ECTA), <https://ecta.org/ECTA/documents/MinaJovanovic3rdStudentAward202012149.pdf>, retrieved on 23 April 2024.

M. Kop, *AI & Intellectual Property: Towards an Articulated Public Domain*, Texas Intellectual Property Law Journal, Vol. 28, No. 1, University of Texas School of Law, 2020.

N. Helberger and N. Diakopoulos, *ChatGPT and the AI Act*, Internet Policy Review, Vol. 12, Issue 1, 16 February 2023, <https://policyreview.info/essay/chatgpt-and-ai-act>, retrieved on 20 March 2024.

T. Margoni, *The Harmonisation of EU Copyright Law: The Originality Standard*, 29 June 2016, <https://dx.doi.org/10.2139/ssrn.2802327>, retrieved on 1 May 2024.

T. Weber, *Artificial Intelligence and the Law – Legal Scholars on the Potential for Innovation and Upheaval*, Stanford Lawyer Magazine, Issue 109, Stanford Law School, Fall 2023.

W. Qian, *The Qualification of Content Generated by Artificial Intelligence in Copyright Law*, Science of Law, No. 5, 2017.

Y. Wan and H. Lu, *Copyright protection for AI-generated outputs: The experience from China*, Computer Law & Security Review, No. 42, Elsevier, 2021.

Z. Dai and B. Jin, *The copyright protection of AI-generated works under Chinese law*, *Tribuna Juridică*, Vol. 13, Issue 2, Editura ASE, 2023. [175]

EU SOURCES / OFFICIAL PAPERS

DIGIBYTE, *First regulatory sandbox on Artificial Intelligence presented*, European Commission, 27 June 2022, <https://digital-strategy.ec.europa.eu/en/news/first-regulatory-sandbox-artificial-intelligence-presented>, retrieved on 10 April 2024.

U. von der Leyen, *A Union that strives for more – My agenda for Europe*, Political Guidelines for the European Commission President, https://commission.europa.eu/document/download/063d44e9-04ed-4033-acf9-639ecb187e87_en?filename=political-guidelines-next-commission_en.pdf, retrieved on 26 February 2024.

AI Watch - Spain AI Strategy Report, European Commission, https://ai-watch.ec.europa.eu/countries/spain/spain-ai-strategy-report_en#regulation, retrieved on 9 April 2024.

Artificial Intelligence Act: MEPs adopt landmark law, European Parliament – News, 13 March 2024, <https://www.europarl.europa.eu/news/en/press-room/20240308IPR19015/artificial-intelligence-act-meps-adopt-landmark-law>, retrieved on 18 March 2024.

Artificial intelligence: Commission kicks off work on marrying cutting-edge technology and ethical standards, European Commission, 9 March 2018, https://ec.europa.eu/commission/presscorner/detail/en/IP_18_1381, retrieved on 13 March 2024.

China's ambitions in artificial intelligence, European Parliament, 2021, [https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/696206/EPRS_ATA\(2021\)696206_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/696206/EPRS_ATA(2021)696206_EN.pdf), retrieved on 11 March 2024.

Commission welcomes political agreement on Artificial Intelligence Act, European Commission, 9 December 2023, https://ec.europa.eu/commission/presscorner/detail/EN/ip_23_6473, retrieved on 21 March 2024.

Copyright Law in the EU: Salient features of copyright law across the EU Member States, European Parliamentary Research Service, June 2018, [https://www.europarl.europa.eu/RegData/etudes/STUD/2018/625126/EPRS_STU\(2018\)625126_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2018/625126/EPRS_STU(2018)625126_EN.pdf), retrieved on 1 May 2024.

Digital Spain Development, España Digital 2026, <https://espanadigital.gob.es/en/implementation-agenda>, 27 June 2022, retrieved on 9 April 2024.

EU Copyright, EUR-Lex, <https://eur-lex.europa.eu/EN/legal-content/glossary/eu-copyright.html>, retrieved on 29 April 2024.

EU's Digital Strategy, España Digital 2026, <https://espanadigital.gob.es/en/estrategia-digital-de-la-ue>, retrieved on 9 April 2024.

Intellectual Property in ChatGPT, IP Helpdesk – European Commission, 20 February 2023, https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/intellectual-property-chatgpt-2023-02-20_en, retrieved 2 May 2024.

Proposal for the AI Act – Analysis of the final compromise text with a view to agreement, Council of the European Union, 26 January 2024, <https://data.consilium.europa.eu/doc/document/ST-5662-2024-INIT/en/pdf>, retrieved on 18 March 2024.

The European AI Alliance, European Commission, <https://digital-strategy.ec.europa.eu/en/policies/european-ai-alliance>, retrieved on 13 March 2024.

Your Guide to IP in Europe, European IP Helpdesk, 2019, https://intellectual-property-helpdesk.ec.europa.eu/document/download/b4b56f73-75e7-422d-a276-c99f0f2c4f4d_en?filename=european-ipr-helpdesk-your-guide-to-ip-in-europe.pdf, retrieved on 29 April 2024.

White Paper on Artificial Intelligence – A European approach to excellence and trust, European Commission, 19 February 2020, https://commission.europa.eu/system/files/2020-02/commission-white-paper-artificial-intelligence-feb2020_en.pdf, retrieved on 13 March 2024.

WEBSITES / MISCELLANEOUS

A. Cerri, *Czech court finds that AI tool DALL-E cannot be the author of a copyright work*, IPKat Blog, 15 April 2024, <https://ipkitten.blogspot.com/2024/04/czech-court-finds-that-ai-tool-dall-e.html>, retrieved on 15 April 2024.

A. Guadamuz, *Artificial intelligence and copyright*, WIPO Magazine, May 2017, https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html, retrieved on 1 March 2024.

A. Hencz, *What is Generative Art? From Seminal Experiences to New Frontiers*, Artland Magazine, <https://magazine.artland.com/generative-art/>, retrieved on 8 March 2024.

A. Lee, *What Are Large Language Models Used For?*, Nvidia, 26 January 2023, <https://blogs.nvidia.com/blog/2023/01/26/what-are-large-language-models-used-for/>, retrieved on 7 March 2024.

A. Lukoseviciene, *Copyright I: Object, Requirements, Consequences*, Lecture on 17 April 2023, Lund University.

A. Mathur, *Case Review: Thaler v. Perlmutter (2023)*, Centre for Art Law, 11 December 2023, <https://itsartlaw.org/2023/12/11/case-summary-and-review-thaler-v-perlmutter/>, retrieved on 7 April 2024.

B. Edwards, *Artist receives first known US copyright registration for latent diffusion AI art*, Ars Technica, 22 September 2022, <https://arstechnica.com/information-technology/2022/09/artist-receives-first-known-us-copyright-registration-for-generative-ai-art/>, retrieved on 27 March 2024.

B. J. Copeland, *artificial intelligence*, Britannica, 4 March 2024, <https://www.britannica.com/technology/artificial-intelligence>, retrieved on 5 March 2024.

B. Marr, *The Difference Between Generative AI And Traditional AI: An Easy Explanation For Anyone*, Forbes, 24 July 2023, <https://www.forbes.com/sites/bernardmarr/2023/07/24/the-difference-between-generative-ai-and-traditional-ai-an-easy-explanation-for-anyone/>, retrieved 7 March 2024.

C. Garcia, *Harold Cohen and AARON - A 40-Year Collaboration*, Computer History Museum, 23 August 2016, <https://computerhistory.org/blog/harold-cohen-and-aaron-a-40-year-collaboration/>, retrieved on 9 March 2024.

C. Mesa, *The US Copyright Office publishes new guidelines for the registration of AI-generated works*, Garrigues, 24 March 2023, https://www.garrigues.com/en_GB/garrigues-digital/us-copyright-office-publishes-new-guidelines-registration-ai-generated-works, retrieved on 7 April 2024.

C. Wankhede, *What is Midjourney AI and how does it work?*, Android Authority, 6 March 2024, <https://www.androidauthority.com/what-is-midjourney-3324590/>, retrieved on 10 March 2024.

E. David, *George R.R. Martin and other authors sue OpenAI for copyright infringement*, The Verge, 20 September 2023, <https://www.theverge.com/2023/9/20/23882140/george-r-r-martin-lawsuit-openai-copyright-infringement>, retrieved on 28 February 2024.

G. Brockman, I. Sutskever and OpenAI, *Introducing OpenAI*, OpenAI, 11 December 2015, <https://openai.com/blog/introducing-openai>, retrieved on 6 March 2024

G. Stripling, *Introduction to Generative AI*, YouTube, uploaded by Google Cloud Tech, 9 May 2023, <https://www.youtube.com/watch?v=G2fqAl-gmoPo>, retrieved on 6 March 2024.

I. Khan, *AI Is Dominating CES 2024. You Can Blame ChatGPT for That*, CNET, 11 January 2024, <https://www.cnet.com/tech/ai-is-dominating-ces-2024-you-can-blame-chatgpt-for-that/>, retrieved on 13 February 2024.

I. Poritz, *AI Art Copyright Ruling Invites Future Battles Over Human Inputs*, Bloomberg Law, 24 August 2023, <https://news.bloomberglaw.com/ip-law/ai-art-copyright-ruling-invites-future-battles-over-human-inputs>, retrieved on 27 March 2024.

J. McCarthy, *What is Artificial Intelligence?*, Formal Reasoning Group, Stanford University, 12 November 2007, <https://www-formal.stanford.edu/jmc/whatisai.pdf>, retrieved on 5 March 2024.

K. Bercimuelle-Chamot, *French Copyright framework for artificial intelligence: a half-hearted attempt*, IPKat Blog, 16 October 2023, <https://ipkitten.blogspot.com/2023/10/french-copyright-framework-for.html>, retrieved on 9 April 2024.

K. He, *Feilin v. Baidu: Beijing Internet Court tackles protection of AI/software-generated work and holds that copyright only vests in works by human authors*, IPKat Blog, 9 November 2019, <https://ipkitten.blogspot.com/2019/11/feilin-v-baidu-beijing-internet-court.html>, retrieved on 13 April 2024.

K. Vass, *Harold Cohen: “Once Upon A Time There Was An Entity Named Aaron” – computer art*, Kate Vass Galerie, 30 April 2020, <https://www.katevassgalerie.com/blog/harold-cohen-aaron-computer-art>, retrieved on 9 March 2024.

Kristina Kashtanova (kris.kashtanova), *I received the Copyright Office's decision today about Zarya of the Dawn*, Instagram, 22 February 2023, <https://www.instagram.com/p/Co-aYkQumio>, retrieved on 5 April 2024.

M. Chui, B. Hall, H. Mayhew, A. Singla and A. Sukharevsky, *The state of AI in 2022—and a half decade in review*, QuantumBlack AI by McKinsey, 6 December 2022, <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2022-and-a-half-decade-in-review/>, retrieved on 4 March 2024.

M. Chui, R. Roberts, L. Yee, E. Hazan, A. Singla, K. Smaje, A. Sukharevsky and R. Zimmel, *The economic potential of generative AI: The next productivity frontier*, McKinsey Digital, 14 June 2023, <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier#introduction>, retrieved on 6 March 2024.

M. Coulter, S. Mukherjee, *Exclusive: Behind EU lawmakers' challenge to rein in ChatGPT and generative AI*, Reuters, 1 May 2023, <https://www.reuters.com/technology/behind-eu-lawmakers-challenge-rein-chatgpt-generative-ai-2023-04-28/>, retrieved on 15 March 2024.

M. M. Grynbaum and R. Mac, *The Times Sues OpenAI and Microsoft Over A.I. Use of Copyrighted Work*, The New York Times, 27 December 2023, <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>, retrieved on 29 February 2024.

M. Sheehan, *China's AI Regulations and How They Get Made*, Carnegie Endowment for International Peace, 10 July 2023, <https://carnegieendowment.org/2023/07/10/china-s-ai-regulations-and-how-they-get-made-pub-90117>, retrieved on 12 March 2024.

R. J. Kasunic, *Re: Zarya of the Dawn (Registration # VAu001480196)*, to Van Lindberg, 21 February 2023, <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf>, retrieved on 28 March 2024.

R. Merritt, *What Is A Transformer Model?*, Nvidia, 25 March 2022, <https://blogs.nvidia.com/blog/2022/03/25/what-is-a-transformer-model/>, retrieved on 7 March 2024.

S. M. Kelly, *AI is not ready for primetime*, CNN, 10 March 2024, <https://edition.cnn.com/2024/03/10/tech/ai-is-not-ready-for-primetime/index.html>, retrieved on 11 March 2024.

S. Nellis, *Apple disclose AI plans later this year, CEO Tim Cook says*, Reuters, 29 February 2024, <https://www.reuters.com/technology/apple-shareholders-reject-ai-disclosure-proposal-2024-02-28>, retrieved on 6 March 2024.

S. Ortiz, *AI arms race: This global index ranks which nations dominate AI development*, ZDNet, 28 June 2023, <https://www.zdnet.com/article/ai-arms-race-this-global-index-ranks-which-nations-are-dominating-ai-development/>, retrieved on 24 March 2024.

S. Ortiz, *What is ChatGPT and why does it matter? Here's what you need to know*, ZDNet, 20 February 2024, <https://www.zdnet.com/article/what-is-chatgpt-and-why-does-it-matter-heres-everything-you-need-to-know/>, retrieved on 7 March 2024.

S. Russell, K. Perset and M. Grobelnik, *Updates to the OECD's definition of an AI system explained*, OECD AI Policy Observatory, 29 November 2023, <https://oecd.ai/en/wonk/ai-system-definition-update>, retrieved on 20 March 2024.

S. Song, *China's First Case on Copyrightability of AI-Generated Picture*, King & Wood Mallesons, 7 December 2023, <https://www.kwm.com/cn/en/insights/latest-thinking/china-s-first-case-on-copyrightability-of-ai-generated-picture.html>, retrieved on 21 April 2024.

T. Murphy, *The evolution of chatbots and generative AI*, TechTarget, 25 April 2023, <https://www.techtarget.com/searchcustomerexperience/infographic/The-evolution-of-chatbots-and-generative-AI>, retrieved on 6 March 2024.

V. Lindberg, *RE: Response under 37 C.F.R. § 201.7(c)(4) to the correspondence of Oct 28, 2022; RE: Registration of Zarya of the Dawn, Reg. No. VAu001480196; (Correspondence ID: 1-5GB561K)*, to Robert J. Kasunic, 21 November 2022, <https://www.copyright.gov/docs/zarya-of-the-dawn.pdf>, retrieved on 28 March 2024.

W. Wright, *Reflecting on one year of ChatGPT: how has the world been changed?*, The Drum, 30 November 2023, <https://www.thedrum.com/news/2023/11/30/reflecting-one-year-chatgpt-how-has-the-world-been-changed>, retrieved on 29 February 2024.

Z. Yang, *Four things to know about China's new AI rules in 2024*, MIT Technology Review, 17 January 2024, <https://www.technologyreview.com/2024/01/17/1086704/china-ai-regulation-changes-2024/>, retrieved on 15 March 2024.

A Brief Description of The Urantia Book, <https://www.urantia.org/urantia-book>, Urantia Foundation, retrieved on 2 April 2024.

About, OpenAI, <https://openai.com/about>, retrieved on 6 March 2024.

Artificial Intelligence 2023 Legislation, National Conference of State Legislatures, 12 January 2024, <https://www.ncsl.org/technology-and-communication/artificial-intelligence-2023-legislation>, retrieved on 25 March 2024.

Blueprint for an AI Bill of Rights – Making Automated Systems Work for the American People, The White House, <https://www.whitehouse.gov/ostp/ai-bill-of-rights/>, retrieved on 24 March 2024.

China's New AI Regulations, Latham & Watkins Client Alert Commentary, 16 August 2023, <https://www.lw.com/admin/upload/SiteAttachments/Chinas-New-AI-Regulations.pdf>, retrieved on 13 March 2024.

China: Starting Points for Legal Research: Background Information, LibGuides at Brooklyn Law School, <https://guides.brooklaw.edu/china>, retrieved on 10 April 2024.

Circular 9: Works Made for Hire Under the 1976 Copyright Act, The United States Copyright Office, August 2003, https://global.oup.com/us/companion.websites/fdscontent/uscompanion/us/pdf/houp/7_5.pdf, retrieved on 4 April 2024.

Common ethical challenges in AI, Council of Europe, <https://www.coe.int/en/web/bioethics/common-ethical-challenges-in-ai>, retrieved on 11 March 2024.

Computer Art - History, Characteristics of Digital Imagery, *Visual Arts Encyclopedia*, <http://www.visual-arts-cork.com/computer-art.htm>, retrieved on 8 March 2024.

Copyrightability - Copyright Basics, Research Guides at University of Michigan, <https://guides.lib.umich.edu/copyrightbasics/copyrightability>, retrieved on 17 May 2024.

Copyright in General (FAQ), The United States Copyright Office, <https://www.copyright.gov/help/faq/faq-general.html>, retrieved on 27 March 2024.

Copyright Registration Guidance: Works Containing Material Generated by Artificial Intelligence, Federal Register, 16 March 2023, <https://www.federalregister.gov/documents/2023/03/16/2023-05321/copyright-registration-guidance-works-containing-material-generated-by-artificial-intelligence>, retrieved on 7 April 2024.

DALL-E 3, OpenAI, <https://openai.com/dall-e-3>, retrieved on 12 March 2024.

European Commission proposes world's first ever regulatory framework on artificial intelligence (AI), Noerr, <https://www.noerr.com/en/insights/european-commission-proposes-world's-first-ever-regulatory-framework-on-artificial-intelligence-ai>, retrieved on 14 March 2024.

Fact Sheet: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence, The White House, 30 October 2023, <https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/>, retrieved on 25 March 2024.

Google Assistant, your own personal Google, Google, <https://assistant.google.com/>, retrieved on 12 February 2024.

Harold Cohen Home Page, <https://www.aaronshome.com/aaron/index.html>, retrieved on 9 March 2024.

High-level summary of the AI Act, EU Artificial Intelligence Act, 27 February 2024, <https://artificialintelligenceact.eu/high-level-summary/>, retrieved on 20 March 2024.

History of Artificial Intelligence – Artificial Intelligence, Council of Europe, <https://www.coe.int/en/web/artificial-intelligence/history-of-ai>, retrieved on 4 March 2024.

Introduction, Beijing Internet Court, 26 March 2019, https://english.bjintercourtcourt.gov.cn/2019-03/26/c_26.htm, retrieved on 11 April 2024.

Jasper – AI copilot for enterprise marketing team, <https://www.jasper.ai/>, retrieved on 6 March 2024.

Larry Page - Interview, Academy of Achievement, <https://achievement.org/achiever/larry-page/#interview>, retrieved on 12 February 2024.

LG OLED TVs – Experience the Power of OLED TV, LG, <https://www.lg.com/us/oled-tvs>, retrieved on 25 February 2024.

Midjourney Prompts, <https://docs.midjourney.com/docs/prompts-2>, retrieved on 3 April 2024

Overview of the Copyright Office, The United States Copyright Office, <https://www.copyright.gov/about/>, retrieved on 27 March 2024.

The flip side of generative AI, KPMG, 2023, <https://kpmg.com/us/en/articles/2023/generative-artificial-intelligence-challenges.html>, retrieved on 29 February 2024.

Welcome to Generative AI, Adobe, 20 February 2024, <https://helpx.adobe.com/creative-cloud/generative-ai-overview.html>, retrieved on 25 February 2024.

WIPO Conversation on Intellectual Property (IP) and Frontier Technology (Sixth Session), World Intellectual Property Organisation, 21- 22 September 2022, https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_2_22/wipo_ip_conv_ge_2_22_3.pdf, retrieved on 19 May 2024.

Table of cases

CJEU

Case C-5/08, *Infopaq International A/S v. Danske Dagblades Forening*, CJEU 16 July 2009.

Joined Cases C-403/08 and C-429/08, *Football Association Premier League and Others*, CJEU, 4 October 2011.

Case C-145/10, *Eva-Maria Painer v. Standard VerlagsGmbH and Others*, CJEU, 1 December 2011.

Case C-310/17, *Levola Hengelo BV v. Smilde Foods BV*, CJEU, 13 November 2018.

Case C-833/18, *SI, Brompton Bicycle Ltd v. Chedech/Get2Get*, CJEU, 11 June 2020.

OTHER JURISDICTIONS

The US Courts

Case 111 U.S. 53, *Burrow-Giles Lithographic Company v. Napoleon Sarony*, Supreme Court of the United States, 17 March 1884.

Case 188 U.S. 239, *Bleistein v. Donaldson Lithographing Company*, Supreme Court of the United States, 2 February 1903.

Case 499 U.S. 340, *Feist Publications Incorporated v. Rural Telephone Service Company Incorporated*, Supreme Court of the United States, 27 March 1991.

Case 1:20cv903, *Stephen Thaler v. Andrew Hirshfield, et al*, United States District Court for the Eastern District of Virginia – Alexandria Division, 24 February 2021.

Case 22-1564 (BAH), *Stephen Thaler v. Shira Perlmutter, et al*, United States District Court for the District of Columbia, 18 August 2023.

Case 1:23-cv-08292-SHS, *Authors Guild and Others v. OpenAI Inc and Others*, US District Court for the Southern District of New York, 5 December 2023.

Case 1:23-cv-11195, *The New York Times Company v. Microsoft Corporation, OpenAI, Inc. and Others*, US District Court for the Southern District of New York, 27 December 2023.

China Courts

Case Jing 0491 Min Chu No. 239, *Beijing Film Law Firm v. Beijing Baidu Netcom Science Technology Co Ltd.*, Beijing Internet Court, 2018. See [https://www.chinadaily.com.cn/specials/BeijingInternetCourtCivilJudgment\(2018\)Jing0491MinChuNo.239.pdf](https://www.chinadaily.com.cn/specials/BeijingInternetCourtCivilJudgment(2018)Jing0491MinChuNo.239.pdf), retrieved on 19 April 2024.

Case Y0305MC No. 14010, *Shenzhen Tencent v. Shanghai Yingxun*, Shenzhen Nanshan District People's Court, 2019. See the summary judgement at <https://www.wipo.int/wipolex/en/text/585875>, retrieved on 7 May 2024.

Case Jing 0491 Min Chu No. 11279, *Li v. Liu*, Beijing Internet Court, 27 November 2023. See <https://english.bjinternetcourt.gov.cn/pdf/BeijingInternetCourtCivilJudgment112792023.pdf>, retrieved on 19 April 2024 or in *Copyright Protection for 'AI-Generated' Images*, GRUR International, Vol. 73, Issue 4, Oxford University Press, April 2024.

Other Courts

Case UKSC 49, *Thaler v. Comptroller-General of Patents, Designs and Trademarks*, United Kingdom Supreme Court, 20 December 2023.