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AI-GENERATED WORKS AND COPYRIGHT

AUTHORED BY - KESHAV BAISOYA

Abstract

Artificial intelligence is the most revolutionary and disruptive technology of the mid twenty-first century, not only because of its capabilities to learn from experience and perform autonomously from humans. This is due to its capabilities to learn as a matter of fact and perform independently from living person. Although the notion of Artificial Intelligence (hereinafter referred as AI) is not new and has been present for over sixty years but its pervasive effect is a relatively recent occurrence.¹

From game-playing cars to self-driving cars, right from automated suggestions on internet platforms to computer-aided diagnostics and from human face recognition to artificial face generation, everywhere we see the revolutionary potential of AI in our daily lives. It is already being used in various fields including the Intellectual Property (hereinafter referred as IP), legal sector; air traffic control systems, healthcare and Internet of Things (hereinafter referred as IoT) including all aspects of other intelligent systems, these are just a few examples. In fact, for the maintenance and operation of our physical and digital infrastructure including the area of IP, we are becoming more and more reliant on AI-based technologies. Owing to autonomous features and ability to learn without assistance of human, the existing sectors of IP are facing a range of difficulties, particularly in the realm of copyright.²

Introduction

The AI and IP has become most of the burning issues of 21st century in context of above aspects. This is a debatable issue because of its breadth and usefulness in variety of fields is being introduced technically in various fields aiming to perform any work in a better way by replacing human being or reducing human effort.

The AI brings the idea of a technology having capacity to think for itself, which is initially inherent in human's cognitive process. It enables a kind of programme or machine to sense and comprehends the environment around him and come up with accurate and quick solutions.

¹ L Bently and B Sherman, (2014), "Intellectual Property Law", 4th ed., Oxford University Press, London, UK, p.43, ISBN- 9780199645558.

² Arthur R. Miller, 1993, 'Copyright protection for computer programs, databases, and computer-generated works; is anything new since CONTU?', Harvard Law Review, March, vol. 106, no. 5, pp. 977-1073.

Because of this capability, it has already reached at that point where it is able to perform those activities which are normally performed by the human beings.³

A recent report of United States (hereinafter referred as US) revealed that the global market of AI which was 2.42 billion U.S. dollar in 2017 is expected to reach 59.7 billion U.S. dollar by 2025. Apart from this PricewaterhouseCoopers (hereinafter referred as PwCs), an UK based international professional services brand of firms predicts that AI could potentially contribute \$15.7 trillion to the global economy by 2035. At this juncture, not even a single aspect of human life which is untouched by artificial intelligence and legal field is one of them. By virtue of rapid growth and various use of this emerging technology of AI, the European Patent Office named it as fourth industrial revolution. In addition, it appears that mankind will be obliged to handle new societal concerns caused by AI in the future decades. It is reasonable to expect that these developments will have a massive impact on society consequently on the development of our legal standards.

A large and diverse literature in the domains of philosophy, computer science, ethics and legal jurisprudence has studied artificial intelligence technologies for decades. Therefore, it should come as no surprise. The researcher would like to explore the utility of AI in legal field particularly in copyright area under the current scenario of intellectual property. Perceiving the rapid growth of AI in creative process, the judges and legislators should also carefully analyse how AI-generated work could be brought under the purview of copyright laws. In this regard the quote of John Smith, Manager of Multimedia and Vision at IBM Research is worthy, which predicts that ***“it’s easy for AI to come up with something novel just randomly. But it’s very hard to come up with something that is novel and unexpected and useful.”***

The substantial progress in programming and computational intelligence has opened up job avenues for computers while it also raises a number of intriguing yet complicated issues affecting the field of intellectual property and the copyright is the highly overlooked area of IP which is facing different challenges.

Copyright is one of the fields of IP which is defined as creation of mind in intangible form and not like other form of tangible property. It cannot be seen or touched but protected under IP regime. It can be divided into two categories: one form can be put under copyright regime, like books, music, films and other forms of artistic works, while other can be put under industrial property, like patent, trademark, designs and geographical indications.

A few years ago, it was only human beings who were capable of creating any creative works

³ Jeremy A. et.al., 2018, Research handbook on the law of AI, Edward Elgar Publishing Limited, Massachusetts, USA, p.519, ISBN- 9781786439048.

such as music, writing, photography, and so on. Nowadays, these works are mostly assisted by AI. AI-based machines have changed the way we work, learn, and enjoy ourselves all over the world, and it is hoped that they will become a part of people's daily lives in the next few years. That is the reason Andrew Ng, A Chinese- American Computer Scientist has termed AI as "*new electricity for the future industry*".⁴

Initially, modern AI research began in 1950s with the notion that with the use of computers and programming a machine might learn like human. The term artificial intelligence was originally used in 1956 at a conference by John McCarthy, who had described it as "*making a machine behaves in ways that would be termed intelligent if a human were doing so.*" AI did not gain traction as a field until the mid-late 1990s or early 2000s, and it has lately made breakthroughs in a number of disciplines. The current success of AI in numerous domains is based on two primary factors; the first is the increasing number and quality of big data and the second is the techniques used for processing and storing of data, both of which have made it highly powerful in the current scenario.

Early research in the field of AI was concentrated on training computers to make them enable to think like humans, but later on, through programming and an internal feedback mechanism, these computers were built in such a way that they could learn on their own and make decisions on their own. Although computers were being used in the field of IP, but no one had anticipated that one day computer would be in a position to generate such work which would be subject matter of copyright because earlier it was used as tool to assist human being. But currently AI is being employed in such a manner that it can generate any work without the need for human intervention by analysing data and human patterns, and applying them to achieve the best results. It also enhances the utilisation of existing machine so that they may be used to their full potential.

In this regard, some latest developments in the field of IP through the application of AI may throw proper light about future of IP right and in the year of 2016 an AI created short novel was selected for Nikkei Hoshi Schnichi Literary Award in Japan but could not win due to lack of human authorship. In the same year Sony presented an AI generated music track called "Daddy's car". In 2018 an AI created artwork, the portrait of Edmond Belamy, sold in New York at the historic Christie's Auction House for almost \$620,500.00. In 2019 Warners Music has signed the world's first ever record to produce AI-generated, twenty music albums. A sound track created by AI software Flow Machines which was presented by Sony's CSL Research

⁴ Eliza Mik, 2021, AI as a Legal Person, In: Jyh-An Lee, et.al., Artificial Intelligence and Intellectual Property, Oxford University Press, Oxford, United Kingdom, 1st ed., p. 430 ISBN 978-0-19- 887094-4.

Laboratory. A Chinese's poem book "The Sunlight that Lost the Glass Window", "The Next Rembrandt" a portrait created through AI by Microsoft in a collaboration of museums in the Netherlands and "AIVA" (Artificial Intelligence Virtual Artist) an AI based artist able to compose classical music created by Aiva Technologies etc. These are only few instances from online media that demonstrate how AI is being employed on a large scale by various organisations in the creative business. These examples compel the society to continue research on these vital issues.⁵

No doubt, the use of AI in this way has changed the face of technology and fate of human intellect. There are various areas in which World Intellectual Property Organization (hereinafter referred as WIPO) and IP Offices are exploring the use of AI and have developed and deployed AI application for automatic classification of patent and goods/services for trademark applications, search of patent prior art and figurative elements of trademarks, examination and formality checks for trademark and patents, helpdesk services and machine translation. In this way at one side, AI seems beneficial for the IP community but on other side, the introduction of AI has brought a number of issues to the legal protection of works under IP regime and is posing serious challenges for IP management.

It is perceived that AI has emerged as a new dimension and intellectual property rights are a vital instrument for protecting invention and providing economic value for intellectual labour. On this issue there have been many discussions and moderations have been held at international level, but no decision has been reached on the concrete solution. The subject of whether or not artificial intelligence's work should be given special status continues to be debated.

Countries such as the European Union (hereinafter referred as EU), United Kingdom (hereinafter referred as UK) and United States of America (hereinafter referred as USA) have worked hard to interpret existing laws in a way that takes AI-generated work into account. The landmark cases *Feist Publications v. Rural Telephone Service Company, Inc.*, 499 U.S. 340 (1991) and *CA Naruto v. Slater*, No 16-15469 (9th Cir. 2018) of United States of America; *Infopaq International A/S v. Danske Dagbaldes Forening*, C-5/08,ECLI:EU:C:2009:465 of EU Acohs Pty Ltd v. Ucorp Pty Ltd., C- 5/08,ECLI:EU:C:2009:465 of Australia addressed the issue of copyright and interpreted the existing copyright laws about the uses of phrases like "authorship" and "intellectual creation" to analyse and come to an opinion about the ownership of IPR. **The copyright ability of AI-generated works** has been questioned as a result of these judgements. These judgements can also be used to discuss the current position about the

⁵ Christopher T. Fleming, 2020, Ownership and Inheritance in Sanskrit Jurisprudence, Oxford University Press, Oxford, London, United Kingdom, 1st ed., p.1, ISBN 978- 0-19-885237-7.

authorship and ownership of AI-generated works under copyright regime. Although the **United States currently lacks legislation to protect AI-created works, China is investing billions of dollars in AI businesses, while Japan and the European Union have increased their AI efforts.** In a similar competition, **India's global status would be influenced if it fails to establish a clear and effective law over this issue.** Once this issue is resolved the remaining issue will easily be resolved.⁶

The judgments, national laws of other countries and international legislations, clearly show that intellectual property particularly copyright is one of the legal fields that has been adversely affected by AI, and in most countries including India, it poses a dilemma, whether AI-generated work fall under IP regulations?

Prima facie, the existing laws particularly those relating to copyright are adequate to safeguard human-created content but the works created through AI-machines are posing certain challenges. There is no clear standpoint about the concept of AI from legal point of view. Therefore, it is difficult to ensure whether AI-generated work can be subject matter of copyright?

In this respect one of the main challenges is whether they should be protected under current laws, and what is the current situation in various nations. Finally, the potential issues that arise when using the traditional approach to AI, as well as potential solutions to these issues still requires through explanation.

As a practical approach, if the protection does not cover AI-generated works, it would be a violation of any country's competition legislation. Therefore, AI-generated works should be protected under the copyright law to sustain the market's spirit of competition.

Recently, WIPO has taken lead through **WIPO Conversation on Intellectual Property and Artificial Intelligence, Second Session, 2020** and convened a conversation on IP and AI, with one of the topics being the need for AI-generated works to be protected. This international effort demonstrates that the whole world community is worried about this issue and is working to determine the best approach to recognise and protect AI-generated works under intellectual property regime. In this context, it would be the right approach that the spirit of competition could be preserved, and it would be a good way to appreciate human ingenuity to recognise legal protection for AI-generated products.

In this field there are a number of international conventions and treaties which addresses such aspects indirectly as AI has not been introduced in any of them. The Berne Convention, 1986

⁶ Jeremy A. Cubert and Richard G.A. Bone, 2018, Research handbook on the law of AI, Edward Elgar Publishing Limited, Massachusetts, USA, p.423, ISBN9781786439048.

revised at Paris in 1971 which talks about the subject matter of copyright, its authorship and indirectly about the ownership of copyrighted work seems relevant to this study. Also the most important international IP agreement TRIPS of 1995, which establishes a global standard for copyright protection is also an instrument in this field.⁷

A thorough examination of all of these treaties makes it evident that neither TRIPS nor the other one approves or prohibits the protection of AI-produced work. As a result, it gives a hope that there may be possibility of giving copyright protection for AI-generated works under copyright regime. So, all of these international conventions may help to find a proper solution for AI-generated works.

Through copyright protection for creative works is provided under European Union, United Kingdom and United States of America but none of them provides any specific provision for AI-generated works.

In this context as per **Section 102(a) of US Copyright Act** it seems there is no problem in giving copyright protection to AI-generated works but when we consider **Section 313.2 of Compendium** of US Copyright Office Practices, we find that the problem started to rise because it requires that creator must be a human being, as was laid down in case of *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. at 58. The USA Court said that works those do not satisfy this requirement is not copyrightable. Therefore autonomously AI-produced works are not copyrightable owing to the lack of a human author requirement under US copyright regime.⁸

Likewise, as per Section 9(3) of the UK Copyright, Designs and Patents Act 1988 (hereinafter referred as CDPA, 1988) defines "*author as a person who makes the arrangements essential for the production of the work*". This raises the possibility of copyright protection for works created by AI in the UK. Here, the meaning of the word "who" as used in Section 9(3) is crucial since it might be difficult to tell who the word "who" refers to. It may be the computer owner, the user or the programmer. As a result, it would be difficult to determine that who will be the author of the work.

As for as the Indian position is concerned, legal framework and judicial system always have been inspired by the United Kingdom, and its most of the legislative instruments are similar to UK. Under **Section 2(d)(vi) of the Indian Copyright Act, 1957** the creator of the work would be the author of the work and inclusion of computer-generated works under copyright law

⁷ Paul Goldstein, 2001, International Copyright, Principles, Law, and Practice, Oxford University Press, Oxford, New York, United States of America, p.203, ISBN 0-19- 512885-0.

⁸ Stuart J. Russell and Peter Norvig, 2010, Artificial Intelligence: A Modern Approach, Pearson Series in AI, 3rd Ed., Pearson Education, Inc., p. 55-59. ISBN 9780136042594.

gives hope for giving protection to AI-generated work. It safeguards the fruits of the labour that goes into creating intellectual work. However, it is debatable that when the term 'author' is employed in the context of computer-generated literary, theatrical, musical, or aesthetic works, the 'author' can only be a 'natural' person.

Despite the fact that the computer-generated works are protected in India as literary works, the IP laws of India do not specify or offer any standards for the protection of AI-produced works. Unfortunately, our courts also have yet to rule on the question of AI-generated works. However as a hope, for the first time the Copyright Office in India has given recognition to an **AI Painting App titled “RAGHAV”** as a co-author of a copyright-protected artistic work.

On the basis of statutory and judicial view, it is clear that a human author is required for a copyright work, but all of these are silent on the issue that AI-produced work should be protected under the copyright Act or not. According to the findings, prima facie it seems that any protection has no value unless it is provided by laws and reinforced with sanction. It will be pointless to talk about protection for AI-generated works until there is a proper legal framework in place. So in order to place the Indian Copyright Laws accordingly, the judicial pronouncements and legal provisions from other countries such as the United Kingdom, the United States of America, the European Union, and Australia can provide tremendous help.

As a result, all conceivable concerns that occur as an application and introduction of the AI in the field of copyright become important to explore. The central question, whether a man-made computer, referred as an "AI machine" may be regarded as an "author" under the present copyright law?⁹

Despite the fact that AI has been examined in a variety of legal and non-legal study domains, none of them has concentrated on the nature of AI in a way that distinguishes it from other comparable notions. However, the majority of the study and article concentrates on legal philosophy and ignores the current state of AI technology and its characteristics, which is the foundation for developing an understanding of AI in the legal realm.

An outline of the legal context in which fundamental protection for AI-generated works may be provided, as well as how society would be affected as a result of these protection, could also be explored for further clarity. A creative work, including what may be protected as a work and what are the prerequisites for it to be called creative, as well as whether copyright rationales and justifications apply to AI-generated works from the standpoint of copyright.

The various aspects of authorship and ownership from the perspective of copyright, such as

⁹ Sam Ricketson, 1991, People or Machines: The Berne Convention and the Changing Concept of Authorship, Columbia VLA Journal of Law and the Arts, vol.16, no.1, .

who can enjoy this work or be regarded its creator and owner, whether AI meets the legal personhood standards. An overview of legal environment in which basic protection for AI-generated works can be given and as a result of these protections how society would get affected also requires its exploration.

AI and IP both operate beyond national borders, what should be the universal principles applicable to intellectual property, particularly copyright, so that uniform rules regarding AI generated works could be evolved or existing copyright laws could be interpreted in such a way that AI-generated works are not treated as a problem under the current copyright regime. In this way this research highlights the question whether and to what extent works produced with the aid of AI is protected under Indian copyright system and what are its viable solutions?

1.1 STATEMENT OF PROBLEM

In present time computer programmes are the key contributors to the production of contemporary creative works such as literary, films, music, software, and so on, in which artificial intelligence is playing an important role in the growth of the number of creative works available to the general public. However, the Indian copyright system is not adequately equipped to deal with a growing number of AI-generated works. However, according to the initial research about the topic, the researcher is of opinion that there is confusion about the copyright protection to AI-generated works in different countries.

It is well accepted fact that AI has a significant role in the development of creative works, and in this respect the Indian copyright laws are prima-facie seems ineffective. In India's copyright system, the dilemma is prevalent regarding that whether AI-generated work can meet the fundamental requirements of creative works as defined by copyright legislation in order to receive copyright protection. It is also doubtful that who is the author of the work, the person who owns AI or who programmed the AI? What are the chances of treating AI as a co-author in a work? Whether AI satisfies the legal personhood criteria and, as a result, may be held accountable for infringement.

There are many complexities which may arise while defining AI from legal perspective. To achieve it the legal status of AI taking into consideration that AI works independently without with minimal level of human control and lack of transparency should be clearly defined.

If AI is capable of producing work without human participation, some questions arise, such as whether AI-generated works may be deemed creative works that meet all copyright criteria. Is it possible to regard the AI-machine as a creator or owner of the work? In such a situation, these issues must be resolved, and the researcher will attempt to do so through this study by

providing appropriate solutions in light of international as well as national norms of the most civilised and developed countries, such as the European Union, the United Kingdom, and the United States of America.

1.2 OBJECTIVES OF THE STUDY

The objective of this research is to highlight how the legal protection granted to creative works can be extended to those works created by AI applications and how these AI-generated works would be considered as creative work under Indian copyright law.

- 1) To identify current flaws in Indian legal systems and law enforcement sectors relating to Intellectual Property, which are being misused by with reference to AI-generated works?
- 2) To identify important methods in law and practise adopted in the developed nations like United Kingdom, the United States and European Union's nation in order to align Indian legislation with international standards and harmonise it with legislation of other countries.
- 3) To examine the influence of upcoming regulations on the current state of AI- generated work in light of the Indian Copyright Act of 1957.
- 4) To ensure whether or not AI-generated work are protectable under the Copyright Laws of India? If the answer is positive then who may be the potential author and owner of the work?

1.3 RESEARCH QUESTIONS

Artificial Intelligence may be defined in a variety of ways. However, for the purpose of this study the notion is that AI is a field of study focused on solving problems that previously could only be solved by the human intellect. In this regard, the dilemma is arises if the work produced by AI is novel, inventive or creative then how to safeguard these works? There are series of questions arise in this regard of AI-generated works, which are as follows:

- 1) What is notion of AI from the point of copyright and whether or not in current scenario AI is efficient to produce any creative works as described by the copyright laws?
- 2) Whether AI-generated works should or would be protected under Copyright Laws of India?
- 3) If, AI-generated work is so protectable then how the authorship and ownership will be determined?

- 4) Whether the International conventions such as Berne Convention, 1986 and TRIPS, 1995 protect AI-generated works? If yes then up to which extent?
- 5) Whether AI-generated works under legal and judicial framework of India, E.U., U.K. and U.S.A. has been covered properly? If not, whether there is need to alter the existing legal and judicial framework?

1.4 SCOPE AND LIMITATION

Artificial Intelligence and intellectual property are the most important aspects of this study; hence numerous aspects of both have been discussed in this study.

AI is a highly technical concept in itself; the researcher will not discuss any technical aspect of AI that appears to be extraneous to this study endeavour.

The area of IP is vast in nature, so copyright is the only specific areas that will be briefly covered from an artificial intelligence perspective by analogies in this study.

In this study the national perspectives of various developed countries such as the European Union, the United Kingdom, and the United States of America will be discussed because these countries are more effectively addressing these issues and it would be beneficial for the studies if any uniform solution could be identified based on the national provisions of these countries.

1.5 HYPOTHESIS

In order to venture upon the study, the researcher shall try to test the following hypothesis in this study.

- 1) The current Indian legal system for copyright protection is effective in ensuring economic rights associated to copyright, but it is ineffective in providing copyright protection to AI-generated work.
- 2) Under Indian copyright system, there is an ambiguity with regard to giving protection to AI-generated works.
- 3) Under the current copyright law, AI-generated work has a hard time becoming a creative work due to a conventional requirement for copyright protection.

1.6 RESEARCH METHODOLOGY

The proposed study shall follow the doctrinal research methodology. The theoretical constructs will be analysed after searching of the existing literature and judicial views we applied for proper understanding of the problem and outcome of the proposed study.

Due to the unavailability of sufficient published materials, this study shall rely on secondary sources, such as commentaries on national and international legislation, as well as academic and media data, all of which were mostly accessible via the internet. The study would be based on a thorough legal interpretation as well as a legal comparison. The data and information shall be gathered from reliable sources and will be properly acknowledged.

1.7 REVIEW OF LITERATURE

Artificial intelligence is a relatively new field of study from a legal standpoint, and most research resources are available online in the form of e-books, online journals, IP- blogs, government reports, and court decisions, therefore all research questions will be answered by the researcher using these materials. These resources were utilised in such a way that no opportunity for uncertain interpretation or hypothetical possibilities was left.

Due to the technicality of the issue, the researcher will confine his search to online legal publications and legal books that give more scholarly perspectives. The researcher has mostly used online news, e-books, IP blogs, and online journals that are focused on artificial intelligence in this research.

For better clarification, the researcher has emphasised reports from various international organisations such as the WIPO and focuses primarily on national legislations of other developed countries such as the EU, the UK, and the USA. In the furtherance of this study some of literatures available at internet and in printed form found to be relevant, are as follows: Andres Guadamuz, Artificial intelligence and copyright, WIPO Magazine, October 2017 this article published in WIPO Magazine which deals the various issues of copyright with regard to AI-produced work and a complete picture in international prospective gave me insight to structure my research work.

Ben Coppin, Artificial Intelligence Illuminated, Jones and Bartlett Publishers International Barb House, Barb Mews London W6 7PA UK (2004) this book was helpful to give me insight about the artificial intelligence. The way it has explained the concept of AI is quite interesting and also historical development of AI also has been discussed in a structured manner.

Deyi Li, Yi Du, Artificial Intelligence with Uncertainty, Chapman and Hall CRC Taylor & Francis Group, Boca Raton, NY, London, U.K., (2007) this book is also dealing in the area of AI and describing various definitions of AI but the most important thing found by the researcher in this book was how it presented the development of AI in past five decade.

Selmer Bringsjord, David Ferrucci, Artificial Intelligence and Literary Creativity_Inside The Mind of BRUTUS, A Storytelling Machine, L. Erlbaum Associates (2000) is another important

book has provided the various test about the authorship of AI in case of literary work, although this does not deal AI from legal prospective but logic given in this book attracted me lot to use this book for my research work.

Stuart J. Russell and Peter Norvig - *Artificial-Intelligence-A-Modern-Approach* by Prentice-Hall, Inc. A Simon & Schuster Company Englewood Cliffs, New Jersey (1995) this book is also dealing with various aspect of AI but the most important point which is relevant for my research work is the description of those works where AI technology is being used.

Hristov Kalin, *Artificial Intelligence and the Copyright Survey* (November 20, 2019) this article is also a recent one and elaborated the survey conducted in USA on AI scientist to check the viability of copyright protection for these works so it is also relevant for this research work.

Davi, Charles, "*A New Model of Artificial Intelligence*" (March 4, 2019) this article gives certain guideline for model copyright law in which AI-produced work could also be protected so it seems helpful for my suggestions if India will be needed to redraft its IP laws.

Toby Bond, Sarah Blair, *Artificial Intelligence & copyright: Section 9(3) or authorship without an author*, *Journal of Intellectual Property Law & Practice*, Volume 14, Issue (6, June 2019) this article has basically discuss copyright provisions provided in U.K. for the protection of computer generated works (CGWs) so this will be helpful to check the viability of IP law with regard to the protection of AI-produced work.

Surden, Harry, *Machine Learning and Law* (March 26, 2014). *Washington Law Review*, Vol. 89, No. 1, 2014 is covers broader aspects of law getting affected by the AI technology which is also helpful while narrowing down the concept to the copyright related issues.

Asay, Clark D., *Independent Creation in a World of AI*, *Florida International University Law Review* (November 11, 2019). In this article it has been argued that AI- produced work should be subject matter of copyright which is helpful in this research to develop strong supposition that AI-produced must be copyrightable.

US Copyright Act and Compendium of Best Practices (issued by the US Copyright Office) have been taken by the researcher into his consideration because these two main bodies are responsible to determine the guidelines and regulations affecting the copyright of computer-generated works. Although both of them do not expressly mention AI machines or their place in the creative process, they do offer a glimpse into the stance of the Copyright Office in the debate on copyright protection of AI-produced works.

EU Copyright Directive [Directive (EU) COM(2016)0593-C8-0383/2016-2016/0280 (COD)] was adopted by European Parliament and Council legislative resolution on dated 26 March 2019 relating to the digital single market and protection of computer generated work, but has

not been implemented yet at the time of writing this synopsis. This document will also be helpful for determination of authorship of AI-produced work.

Feist Publications v. Rural Telephone Service 499 U.S. 340 (1991) was famous case about phone directory and its originality. In which the US Supreme Court commented that “100 uncopyrightable facts do not magically change their status when gathered together in one place.” So, the end result would not be copyrightable, whereas the European Union gives protection to database.

IceTV Pty Limited v. Nine Network Australia Pty Limited, HCA 14, S415/2008 (2009) Australian case on the issue of copyrightability of TV schedule generated by computer seems relevant as it talks about computer generated compilation of data does not constitute originality. If this case would have been arisen in EU then in form of data it would had been protected. So, in that sense the reasoning between European Union and Australia also differs, even if the end result would be the same.

Nova Productions v. Mazola Games, A3/2006/0205 (2007) decided by the UK Court of Appeal given new way for future development of considering a user as the author, if they contribute artistic skill and labour to the work. This judgement supports the view of the developer of the game that then generates further works protected by copyright as the owner of all copyrights. *Telstra Corporation Ltd., v. Desktop Marketing Systems Pty.*, FCA 621 (2001) is relevant as it popped up a question about joint authorship: “Is every employee who contributes to the final product a joint author of the directory?” the clear answer could not be given but it gives reason to think that in the same way whether every employee who contributes to the AI-software can be considered as author? This question is especially important when questions arise on topics of AI technologies that have not yet been properly regulated, such as self-driving cars or unmanned ships for which software code required to make them functional, behind such an invention there is always a team. Due to malfunctioning of the software this may cause an accident then who ought to be in responsibility of this type of malfunction? By answering this it can be determined who would be an author in case of joint work.