THE GHOST IN THE MACHINE: NAVIGATING AI INTELLECTUAL PROPERTY RIGHTS IN HONG KONG AND BEYOND

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ABSTRACT

With the New Age of AI and technology, as much as new opportunities have emerged, so have the challenges, especially in the field of copyright law internationally. The paper examines the existing legal framework and concepts built around copyright law internationally by identifying the missing links and proposes the required areas where reforms have become crucial considering the advancement of AI generated content. The paper also discusses a series of case studies which highlights the impact of AI in copyright law as well as the recent legal updates in Hong Kong. These developments are at par with international standards and exhibit how the approach that Hong Kong uses aligns with those of the international jurisdictions. The paper also examines the need to bring more legal clarity so that ethical considerations like ensuring fair usage and preventing discriminatory outputs are also included. This can only be achieved by having a clear and comprehensive ethical code intertwined into a strong legislative framework which addresses all the issues pertaining to AI so that the intellectual property rights benefits can be maximised. Further, the paper also purports to provide insights to regulators, policymakers and legal professionals as a guide into the ever-evolving landscape of AI so it properly strikes the right argument to maintain a healthy balance between ethical standards, the legal requirements of copyright protection and economic interests at large.

KEYWORDS: AI, Hong Kong, Authorship, Ethical, Legal, Stakeholders.

INTRODUCTION

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AI is not only revamping businesses and trades; it's reworking the pace and spirit of innovation. No one will cast a doubt on the immense effectiveness and efficiencies AI has created in different sectors. With great opportunities come great challenges, especially in the intellectual property ownership and rights. Let say if AI systems create some works based on their self-learning, should the AI be regarded as the author and hence be given ownership rights.[153]

Hong Kong has been renowned in her innovation and technological advancements. The Innovation, Technology and Industry Bureau ("ITIB") listed new industrialization as a permanent policy function and focus in July 2022 for the promotion of further development of innovation and technology. The Hong Kong Innovation Development Plan Technology Development Blueprint (Innovation and Technology Blueprint) is released by ITIB in December 2022; establishing a clear development path and developing a systematic strategic plan for innovation and technology in Hong Kong. According to the said Blueprint, Hong Kong is under four major development directions, namely "strengthening the innovation and technology ecosystem and promoting Hong Kong's new industrialization"; "expanding innovation and technology talent pool to create strong growth momentum"; "promoting digitalization to develop the economy and build Hong Kong into a smart city"; and "proactively integrating into the overall urban development situation" so as to strengthen the city's function as a bridge between Mainland China and the rest of the world, thereby accelerating the formation of "high-quality new productive forces" for Hong Kong's advantages. In the process of implementing the Blueprint, the Hong Kong government SAR has to maintain the equilibrium between AI development and intellectual property right protection.[154]

In response to address these issues, the government of Hong Kong SAR initiated a progressive public consultation to revise the Copyright Ordinance (Chapter 528) to take into account the consequences of AI-generated content. The consultation examines pressing issues such identifying AI-generated content, copyright infringement liability, new text and material mining (TDM) exceptions and the wider implications for AI technology development. These deliberations echo with global discussions with countries facing similar challenges and opportunities involving the European Union, the United States and Mainland China.[155]

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[153]Alesia Zhuk, 'Navigating the Legal Landscape of AI Copyright: A Comparative Analysis of EU, US, and Chinese Approaches' (2024) 4 AI and Ethics 1299 <https://doi.org/10.1007/s43681-023-00299-0> accessed 20 December 2024

[154] HK Intellectual Property Department, 'Public Consultation on Copyright and Artificial Intelligence' (2024) <https://www.ipd.gov.hk/en/copyright/current-topics/public-consultation-on-copyright-and-artificial/index.html> accessed 20 December 2024

[155] UK Government, 'Copyright and Artificial Intelligence' (2024) <https://www.gov.uk/government/consultations/copyright-and-artificial-intelligence> accessed 20 December 2024

Adopting knowledge in the constantly evolving fields of artificial intelligence and intellectual property is both necessary and required for governments, attorneys, and entrepreneurs. This paper investigates into these intricacies to provide new perspectives and practical propositions for integrating AI innovation with IP protection, helping to build a resilient and forward-looking intellectual property regime and create an environment in Hong Kong and beyond so that innovation and ethics can co-exist harmoniously.

HISTORY OF AI AT A GLANCE

AI has been both a popular expression and an enchanting legend since the mid of the 20th century when idealists such as Alan Turing and John McCarthy laid a solid foundation for the technological revolution afterwards. In AI, the Turing test is an experimental technique used to assess a computer's capacity for human-like thought. The Turing test bears the name of Alan Turing, a British computer scientist, cryptanalyst, mathematician, and theoretical biologist. Then, in 1956, McCarthy devised the term "artificial intelligence" at the Dartmouth Conference, a pivotal moment that ignited the AI flame.[156]

In these early days, AI was about pioneering algorithms and creating the first programs that could play chess and solve mathematical puzzles.[157] However, the path wasn't always smooth. The 1970s and 1980s saw the "AI winters," periods marked by dwindling funding and interest due to unmet expectations. Yet, the dream never died. Researchers soldiered on, making strides in machine learning, neural networks, and expert systems.[158]

AI saw a renaissance in the 1990s and 2000s, driven by advancements in computing process and power, the accessibility of enormous datasets and more intelligent algorithms. Remember IBM's Deep Blue, a chess expert system running on a unique, purpose-built IBM supercomputer. It was the first machine to defeat the current world champion and the first to participate under regular time management. In 1996, it played its first six-game match against world champion Garry Kasparov, losing 4-2. In 1997, he was promoted to a six-game rematch and defeated Kasparov with two wins and three draws. The success of Deep Blue is regarded as a landmark in the AI history which has been widely reported in books and movies. In the

[156] John McCarthy, Marvin L. Minsky, Nathaniel Rochester, and Claude E. Shannon, 'A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence' (1956) 27(4) AI Magazine 12 <https://ojs.aaai.org/aimagazine/index.php/aimagazine/article/view/1904> accessed 20 December 2024

[157] Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach (3rd edn, Pearson 2016) <https://people.engr.tamu.edu/guni/csce421/files/AI_Russell_Norvig.pdf> accessed 20 December 2024

[158] Daniel Crevier, AI: The Tumultuous History of the Search for Artificial Intelligence (Basic Books 1993) <https://www.researchgate.net/publication/233820788_AI_The_Tumultuous_History_of_the_Search_for_Artificial_Intelligence> accessed 20 December 2024

2010s, there came the deep learning, neural networks, bringing forth or reforming realms such as image and speech recognition, self-driving automobiles, and so on.[159]

Nowadays, AI is everywhere and has become part of our living. For example, with the help of AI voice assistant, it is possible to control electronic appliances from anywhere in the home. The decision we have to make today is not whether we should use AI, but which AI is the best. People ask questions like "What's the best assistant, Google, Siri, or Alexa?" The agile development of AI has improved its quality but also thrown challenges, in particular, in the field of intellectual property.[160]

SYNOPSIS OF AUTHORSHIP RIGHTS AND COPYRIGHT LAW

Intellectual property rights are often considered champions in the legal sector because they serve to protect creations and innovations of human beings. Since people can use many forms of intellectual property rights, for future financial benefit and corporate expansion, innovations and creations are frequently associated with economic progress.[161]

Copyright law gives authors the exclusive rights to copy, distribute, exhibit, perform, and develop derivative works based on their works of art. Furthermore, copyright protection begins immediately at the time of creation and continues throughout the lifetime of the author plus an extra 70 years (U.S. Copyright Office, 2021).[162] The general norm is that copyright is valid for the author's lifetime plus an additional 50 years in most nations. This holds true for works of literature, theater, music, and art. On December 31 of the final calendar year of the protection period, copyright will specifically expire. The copyright of a book would thus expire on December 31, 2024, if it was written on May 1, 1927, and the author passed away on June 15, 1974.

The main purpose of copyright law is the balancing of interests. In addition to providing the public with access to creative content through mechanisms like fair use and the public domain, it guarantees that authors receive the credit and financial compensation they are due. Limited unrestricted use of copyrighted content for research, teaching, and critique is allowed under

[159] Yann LeCun, Yoshua Bengio, and Geoffrey Hinton, 'Deep Learning' (2015) 521(7553) Nature 436 <https://doi.org/10.1038/nature14539> accessed 20 December 2024

[160] Ian Goodfellow, Yoshua Bengio, and Aaron Courville, Deep Learning (MIT Press 2016) <http://alvarestech.com/temp/deep/Deep%20Learning%20by%20Ian%20Goodfellow,%20Yoshua%20Bengio,%20Aaron%20Courville%20(z-lib.org).pdf> accessed 20 December 2024

[161] WIPO, World Intellectual Property Report 2020: The Role of Intellectual Property in Sustainable Development (2020) <https://www.wipo.int/en/web/sdgs> accessed 20 December 2024

[162] US Copyright Office, Compendium of U.S. Copyright Office Practices, Third Edition (2021) <https://www.copyright.gov/comp3> accessed 20 December 2024

fair use.[163] But here's the twist—AI is shaking things up. AI systems can autonomously generate content, raising mind-bending questions about authorship and ownership. With a view to providing sufficient protection to both innovation and intellectual property rights, the legal mechanism must match with the AI advancement.[164]

RELATIONSHIP BETWEEN AI AND COPYRIGHT LAW

TRADITIONAL APPROACHES OF AUTHORSHIP AND OWNERSHIP

Copyright law has always been established on the idea that a copyrightable content is a creation of a person who, as an author, has the exclusive right to deal with the work such as copying, distributing, displaying, performing and even selling, mortgaging, licensing and so on. The crux is the authors are being recognized as the owners and as a result can derive financial gains from the works and, at the same time, the community at large can have fair use as prescribed by the law.

In this framework, authorship is deeply intertwined with human creativity and ingenuity. Creators invest time, skill, and energy to create a work, and copyright law protects these investments by granting them exclusive rights. Due to this traditional thinking, we have firmly believed that a work which can be given copyright must be created by a human being.[165] [166]An author gives up one's time, skill, and effort into creating a work, and copyright law serves to protect these investments by granting exclusive rights to the author.[167]

HOW AI GENERATED CONTENT CHALLENGES THESE APPROACHES

AI has now changed the rules of the game. AI generated content is throwing these traditional approaches of authorship and ownership into disarray. AI systems can autonomously generate text, images, music and other creative content. These creations often display complexity and originality that rival human-made works, leading to significant legal and ethical dilemmas.[168] Identifying the author is one of the most difficult tasks. AI cannot be regarded as a "author" in the conventional sense as it lacks consciousness and intention. This begs the crucial question:

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[163] Lawrence Lessig, Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity (Penguin Press 2004) <https://www.americansforthearts.org/by-program/reports-and-data/legislation-policy/naappd/free-culture-how-big-media-uses-technology-and-the-law-to-lock-down-culture-and-control-creativity> accessed 20 December 2024

[164] Alesia Zhuk (n 1).

[165] HK Intellectual Property Department, Copyright Ordinance (Cap 528) (2024) <https://www.ipd.gov.hk/en/copyright/index.html> accessed 20 December 2024

[166] HK Intellectual Property Department (n 2).

[167] European Parliament, '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' (2019) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0790> accessed 20 December 2024

[168] Alesia Zhuk (n 1).

who is the owner of the copyright to AI-generated works? Is it the people who create the AI, the people who enter data and control its actions, or the organizations that possess the AI systems?[169]

Moreover, AI-generated works challenge the very idea of originality. According to copyright law, a work must be unique in order to be protected. However, since AI systems often draw from vast datasets, there's a concern that AI-generated content might heavily rely on existing works, potentially leading to issues of copyright infringement.[170]

CASE STUDIES: "THE NEXT REMBRANDT" AND OTHER NOTABLE PROJECTS

Step into the world of "The Next Rembrandt"—a remarkable AI art project that blends technology and creativity. This collaboration between ING Bank, Microsoft, and a team of art historians and data scientists aimed to resurrect the style of the legendary Dutch master, Rembrandt. Using machine learning algorithms to analyze Rembrandt's body of work, the AI generated an original painting that closely mimics the artist's technique, composition, and style.[171]

This project ignited a firestorm of debate within the art and legal communities. Deeply troubling issues regarding authorship and the applicability of copyright laws to AI-generated art are brought up by the breathtaking fusion of technology and artistic expression. Who owns the copyright to such a creation? Should these works be protected by the existing intellectual property rights framework?[172]

Other groundbreaking projects include OpenAI's GPT-3, which generates eerily human-like text based on prompts, and Google's DeepDream, which creates surreal, dreamlike images by enhancing patterns in existing pictures. These initiatives demonstrate AI's enormous creative potential and the pressing need to update copyright legislation to take into account the realities of AI-generated work.[173]

To guarantee that creators' rights and AI's creative potential are completely safeguarded and balanced, the legal framework must be modified in accordance with the development of the technology in use.

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[169] US Copyright Office (n 10).
[170] UK Government (n 3).
[171] ING, 'The Next Rembrandt' (2016), accessed 20 December 2024, <https://www.nextrembrandt.com>.
[172] Sarah Stephens, 'Protecting "The Next Rembrandt": Copyright in AI-Generated Works' (IAMSTOBBS, 2021) <https://www.iamstobbs.com/opinion/protecting-the-next-rembrandt-copyright-in-ai-generated-works> accessed 20 December 2024
[173] Alexander Mordvintsev, Christopher Olah, and Mike Tyka, 'Inceptionism: Going Deeper into Neural Networks' (Google Research Blog, 2015) <https://research.googleblog.com/2015/06/inceptionism-going-deeper-into-neural.html> accessed 20 December 2024

LEGAL FRAMEWORK AND REFORM

REVIEW OF HONG KONG'S CURRENT LEGAL FRAMEWORK

The legal framework for intellectual property in Hong Kong is strong and extensive. The foundation of copyright protection is the Copyright Ordinance (Cap. 528), which protects a vast variety of works, including sound recordings, motion pictures, broadcasting, printing arrangements, and literary, artistic, musical, and dramatic works.[174]

Along with moral rights to safeguard one's reputation and personal assets, the law gives artists the exclusive authority to copy, distribute, perform, and exhibit their works.[175] Particularly, section 11(3), stipulates that the author is the one who made the required preparations for the creation of the work in the case of computer-generated works.

However, this framework has limitations, especially when it comes to authorship, ownership, and responsibility, as revealed by AI-generated content. Despite their coverage, current legal laws fall short in addressing the complexity of AI technology. To guarantee legal certainty and protection for all pertinent stakeholders, clearer advice is required.

RECENT LEGAL DEVELOPMENT AND PUBLIC CONSULTATION

To address these challenges, the Hong Kong government SAR issued a public consultation on 8 July 2024 to modernize and better adapt the Copyright Ordinance to AI-generated works. This consultation mainly revolves around four key issues:

- Protection of AI-generated works by copyright: Examine if additional legal measures are required to address the problem of defining authorship and ownership of works produced by AI.
- Liability for copyright infringement of works generated by AI: Examine liability issues and whether current infringement provisions are applicable to various scenarios involving works generated by AI.
- Potential introduction of specific copyright exemptions: To strike a balance between the interests of copyright owners and users and enable the use of copyright-protected resources in AI development, take into account Text and Material Mining (TDM) exceptions.
- Other issues related to generative AI: Exploring ethical implications, such as the creation of deepfakes, and the need for transparency in AI development.

COMPARISON WITH INTERNATIONAL STANDARDS

[174] HK Intellectual Property Department (n 2)
[175] *Ibid*

When compared to other major economies, several key points emerge:

- European Union (EU): AI-generated works that satisfy the requirements of originality and human authorship are recognized as copyrightable under the EU Copyright Directive (2019). In order to promote the development of AI, the EU additionally takes into account particular exceptions for text and data mining.
- United States (US): Certain uses of copyrighted content are permitted in the US due to its expansive fair use concept. A more conventional approach is highlighted by the US Copyright Office's declaration that works produced without human authorship are not copyrightable.[176] An image from a graphic novel called "Zarya of the Dawn" was partially assisted by a generative AI tool, but the author claimed she used "hundreds and thousands" of iterative prompts to create the final image. In a famous decision, the Office first approved and then later denied to register the copyright of the image.[177]
- Mainland China: AI-generated content is not specifically covered by their copyright law, but there are proposals to amend the legislation to promote innovation and copyright protection.[178] The Chinese court currently holds that AI is merely a tool of human ingenuity. The court has also underlined that each case is unique when determining whether AI-generated content qualifies as a "work" for copyright purposes. The outcome of upcoming lawsuits still remains to be seen.[179]
- United Kingdom (UK): The UK is consulting on updates to its copyright framework, aiming to reward human creativity, incentivize innovation, and provide legal certainty for the creative industries and AI sector.[180]

KEY COMPARISONS AND INSIGHTS

- Recognition of AI-Generated Works: While the US mandates human authorship, the EU and UK acknowledge AI-generated works that involve a substantial amount of human intervention. The government of the Hong Kong SAR will need to give this issue more thought and develop a more precise policy.
- Text and Data Mining as exceptions: The UK and EU are looking for TDM exceptions. These tendencies are in line with Hong Kong's consideration.

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[176] US Copyright Office (n 10)
[177] Pin-Ping Oh, Harry Qu, and Toby Bond, 'Copyright Protection for AI-Generated Works – Recent Developments' (Bird & Bird, 9 February 2024) <https://www.twobirds.com/en/insights/2024/china/copyright-protection-for-ai-generated-works-recent-developments> accessed 21 December 2024
[178] Alesia Zhuk (n 1)
[179] *Ibid*
[180] UK Government (n 3)

- Ethical Considerations and Transparency: Ethical considerations are common across jurisdictions. Hong Kong's focus on these issues reflects global concerns.
- Liability and Enforcement: The US and EU address liability and enforcement for AI-generated works. Hong Kong's broad provisions align with this adaptable approach.

RECOMMENDATIONS

With bringing local law into line with worldwide standards and accounting for the unique circumstances of Hong Kong's innovation ecosystem, Hong Kong's legal framework and planned amendments aim to address or lessen the difficulties caused by AI-generated material. Some important recommendations include:

- Distinguish authorship and ownership: Clearly define who should be the owner and author of works produced by AI.[181]
- Provide TDM exceptions: Introduce TDM exceptions to support AI advancement while copyright holders' rights can be protected.[182]
- Advocate transparency and ethical AI: Devise rules and regulations that support transparency and tackle ethical considerations.[183]
- Enhance international cooperation: Set up international cooperation, harmonize AI copyright laws and share best practices.[184]
- Encourage innovation: Ensure that the legal framework supports AI technology innovation and maintain Hong Kong's leading position in intellectual property rights.[185]

By adopting these recommendations, Hong Kong may promote a dynamic digital economy, support the advancement of AI and intellectual property rights, and provide a flexible structure for intellectual property rights.

ETHICAL CONSIDERATIONS IN AI DEVELOPMENT

With every new innovation come new challenges, particularly in the realm of AI, where machines require human training. This underscores the paramount importance of the ethical use of technology. Since most AI models rely on algorithms, it is crucial to ensure that these algorithm models are grounded in ethical considerations that reflect societal values, as they

[181] Alesia Zhuk (n 1)
[182] UK Government (n 3)
[183] HK Intellectual Property Department (n 2)
[184] Alesia Zhuk (n 1)
[185] HK Intellectual Property Department (n 2)

impact all stakeholders.[186] AI algorithms can produce discriminatory outputs that may lead to unfair practices. Therefore, senior management must establish clear accountability and take responsibility for both data inputs and outputs. This accountability is essential to mitigate the risks associated with bias in AI systems.[187]

BIASES IN AI

Algorithms based on raw data often contain inherent biases, which can stem from various stages of data handling, including collection and processing. Consequently, there is a significant risk that the data may reflect historical inequalities and societal prejudices. [188] The principle of "garbage in, garbage out" applies here; unreliable data can lead to unfair outcomes.[189] For example, discrimination against some individuals from certain racial or ethnic backgrounds may be due to biases present in historical data. Such biases may inadvertently be retained by algorithms, leading to ongoing discrimination. Conversely, certain groups might receive preferential treatment based on biased algorithmic conclusions derived from past data patterns.[190]

Biases can arise from several sources, including:

- **Data Selection**: The manner in which data is selected can introduce biases if it does not adequately represent the entire population.[191]
- **Data Labeling**: Errors in labeling can perpetuate inaccuracies that influence algorithmic outcomes.[192]

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[186] Luciano Floridi and others, 'AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations' (2018) 28(4) Minds and Machines 689 <https://doi.org/10.1007/s11023-018-9482-5> accessed 21 December 2024

[187] Reuben Binns, 'Fairness in Machine Learning: Lessons from Political Philosophy' (2018) Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency 149 < https://arxiv.org/pdf/1712.03586 > accessed 20 December 2024

[188] Solon Barocas and Andrew D. Selbst, 'Big Data's Disparate Impact' (2016) 104(3) California Law Review 671 <https://doi.org/10.2139/ssrn.2477899> accessed 20 December 2024

[189] Jeffrey Dastin, 'Amazon Scraps Secret AI Recruiting Tool That Showed Bias Against Women' (Reuters, 2018) <https://www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G> accessed 20 December 2024

[190] Faith Gordon and Virginia Eubanks, Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor (St. Martin's Press 2018) <https://www.researchgate.net/publication/337578410_Virginia_Eubanks_2018_Automating_Inequality_How_High-Tech_Tools_Profile_Police_and_Punish_the_Poor_New_York_Picador_St_Martin's_Press> accessed 20 December 2024

[191] Harini Suresh and John Guttag, 'Understanding Potential Sources of Harm Throughout the Machine Learning Life Cycle' (2021) MIT Case Studies in Social and Ethical Responsibilities of Computing, Summer 2021 <https://doi.org/10.21428/2c646de5.c16a07bb> accessed 20 December 2024

[192] Margaret Mitchell and others, 'Model Cards for Model Reporting' (Proceedings of the Conference on Fairness, Accountability, and Transparency, 2019) <https://dl.acm.org/doi/10.1145/3287560.3287596> accessed 20 December 2024

- **Algorithm Design**: The design choices made during algorithm development may inadvertently embed biases.[193]

Human errors also play a significant role if the collected data represents only a fraction of the population rather than the whole. Therefore, it is imperative that data collection efforts encompass diverse demographic groups to avoid such biases and ensure that AI systems operate fairly.[194]

ADDRESSING ETHICAL CHALLENGES

To effectively manage these ethical challenges, organizations should adopt several key strategies:

1. **Diverse Dataset Selection**: Organizations must prioritize the usage of diverse datasets that reflect various demographic groups to minimize biases and ensure fairness in AI outputs.[195]
2. **Internal Audits for Bias Detection**: Similar to how organizations implement risk management practices, internal audits should be conducted to investigate potential biases within algorithms. This proactive approach enables organizations to identify and address biases at their root.[196]
3. **Diverse Development Teams**: By bringing a variety of viewpoints and experiences to the algorithm design process, encouraging diversity within development teams can aid in the mitigation of biases.[197]
4. **Transparency and Accountability**: Establishing clear communication about the decision-making procedures using AI systems is important for organizations. Building trust between stakeholders and facilitating educated conversations about the possible hazards and constraints of AI outputs promotes further transparency.[198]

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[193] Batya Friedman and Helen Nissenbaum, 'Bias in Computer Systems' (1996) 14(3) ACM Transactions on Information Systems (TOIS) 330 <https://doi.org/10.1145/230538.230561> accessed 20 December 2024
[194] Tolga Bolukbasi and others, 'Man is to Computer Programmer as Woman is to Homemaker? Debiasing Word Embeddings' (2016) Advances in Neural Information Processing Systems 4349 <https://arxiv.org/abs/1607.06520> accessed 20 December 2024
[195] Timnit Gebru and others, 'Datasheets for Datasets' (Proceedings of the 5th Workshop on Fairness, Accountability, and Transparency in Machine Learning, 2021) <https://www.thetalkingmachines.com/sites/default/files/2021-11/3458723.pdf> accessed 20 December 2024
[196] Wilberforce Murikah, Jeff Kimanga Nthenge, and Faith Mueni Musyoka, 'Bias and Ethics of AI Systems Applied in Auditing – A Systematic Review' <https://www.sciencedirect.com/science/article/pii/S2468227624002266> accessed 20 December 2024
[197] Reuben Binns (n 42)
[198] Mike Ananny and Kate Crawford, 'Seeing Without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability' (2018) 20(3) New Media & Society 973 <https://doi.org/10.1177/1461444816676645> accessed 20 December 2024

5. **Training and Awareness**: Providing training on ethical considerations related to AI usage will empower employees to recognize potential biases and engage in responsible practices when working with AI technologies.[199]
6. **Ethical Guidelines**: Developing comprehensive ethical guidelines for AI development will help organizations navigate complex ethical dilemmas while ensuring compliance with societal values and legal standards.[200]

IMPROVING TRANSPARENCY

For an effective governance system to function, it is essential that stakeholders remain involved at all stages and that the system addresses their needs. Organizations must strive to enhance clarity and open-mindedness regarding the interoperability of their systems with data sources, as well as how outputs are generated. Simultaneously, the stakeholders should be able to understand these processes, contributing to greater transparency.[201]

Transparency is especially important when dealing with new innovations. Fostering a culture of transparent practices builds trust among stakeholders, as they should be able to easily comprehend how AI-generated content is created.[202] Another crucial step toward enhancing transparency is establishing clear communication about potential risks, limitations, and restrictions associated with the outputs generated by AI. This approach will help manage stakeholder expectations and create an additional layer of trust.[203]

Furthermore, mechanisms should be put in place to document all critical processes, including sample datasets and algorithms used. It is also important to maintain detailed minutes of decision-making processes whenever possible.[204]

ENSURING FAIR USE

Fair use of copyrighted material can only be achieved when organizations ensure that AI systems do not unfairly exploit or misrepresent the sources of data. Therefore, it is essential for

[199] Mike Ananny and Kate Crawford, 'Disability, Bias, and AI' (AI Now Institute, 2018) <https://ainowinstitute.org/whittakeretal2018.pdf> accessed 20 December 2024
[200] Luciano Floridi and others (n 41)
[201] Mike Ananny and Kate Crawford (n 53)
[202] Nicholas Diakopoulos, 'Accountability in Algorithmic Decision Making' (2016) 59(2) Communications of the ACM 56 <https://doi.org/10.1145/2844110> accessed 20 December 2024
[203] David Hoover and Heston Richard, 'Why Transparency is Crucial for Human-Centric AI' (2024) Harvard University <https://www.researchgate.net/publication/386246082_Why_Transparency_is_Crucial_for_Human-Centric_AI> accessed 20 December 2024
[204] Meredith Whittaker and others (n 54)

organizations to be vigilant in avoiding breaches of copyright laws while training AI models, particularly when utilizing publicly available content.[205]

Additionally, organizations need to make sure their AI models don't have any discriminatory inclinations and that the algorithms promote fairness and equity. As datasets continue to expand, regular evaluations are necessary to identify and implement corrective actions. It is also crucial to keep all relevant stakeholders informed about the impact of these changes at all times.[206]

ETHICAL GUIDELINES

Organizations need to be aware of the accountability that comes with the use of AI and take it seriously, remaining answerable for any unethical outputs or damages caused by biases in the system. To achieve this, organizations can establish a dedicated team with clearly defined roles and responsibilities for individuals overseeing various aspects of AI development and deployment.[207]

This can be accomplished by integrating ethical guidelines into the organization's policymaking processes, encompassing principles such as privacy, dignity, transparency, responsibility, and equality.[208] These frameworks can either be defined by relevant industry bodies or customized to meet the specific needs of the organization based on its business nature and AI usage.[209]

Furthermore, inculcating a spirit of ethics within the organization requires providing employees with proper training on ethical considerations and encouraging open discussions about potential misuse or ethical dilemmas. The commitment of senior management to uphold ethical practices sets a tone that ensures profit maximization does not overshadow value creation.[210]

PRACTICAL SIGNIFICANCE

CASE STUDIES AND ANALYSIS OF LEGAL CONSEQUENCES

AI technology is shaking up the intellectual property world. To see this in action, let's dive into some exciting case studies such as "The Next Rembrandt" and OpenAI's GPT-3.

"THE NEXT REMBRANDT" PROJECT

[205] Pamela Samuelson, 'AI Authorship?' (Communications of the ACM, 1 July 2020) <https://cacm.acm.org/opinion/ai-authorship> accessed 20 December 2024
[206] Solon Barocas and Andrew D. Selbst (n 43)
[207] Wilberforce Murikah, Jeff Kimanga Nthenge, and Faith Mueni Musyoka (n 51)
[208] Luciano Floridi and others (n 41)
[209] Reuben Binns (n 42)
[210] Meredith Whittaker and others (n 54)

Imagine AI infusing Rembrandt's spirit to create a brand-new masterpiece. This is exactly what the "Next Rembrandt" project aims to achieve. By using machine learning algorithms to analyze Rembrandt's work, AI produced an original painting that reflected the Dutch master's technique and style.[211] This groundbreaking project sparked fierce debate over authorship and ownership. Since the painting was created autonomously by AI, it doesn't quite fit in with traditional concepts of human creation. This disruption requires a reexamination of the legal framework that determines who gets copyright—AI developers, data scientists, or funding entities.

OpenAI's GPT-3

The next language model is OpenAI's GPT-3, which can generate writing that resembles that of a human being when given basic instructions.[212] Its ability to produce coherent and contextual text raises thorny questions about authorship and copyright. If a user prompts GPT-3 to write an paper, who owns the copyright? User, or OpenAI, the creator of the model? These incidents demonstrate how urgently precise legal rules for protection of AI-generated works are needed.

Practical advice for governments, legal practitioners and researchers

With a view to alleviating or resolving the problems and legal ramifications of AI-generated content, here are some forefront recommendations for governments, legal practitioners, and researchers:

- **Delineate authorship and ownership:** Establish precise rules about the ownership and authorship of content produced by AI. For instance, considering AI as a tool and granting authorship to the person or organization in charge of its development and use.[213]
- **Devise distinct rules and regulations on AI:** Revise the legal framework to give some recognition to AI-generated works. For example, formulating special rights for AI-generated content and providing a special legal status.[214] Just like it is a derivative work similar to a translation or a motion picture version of a novel.
- **Advocate the ethical development of AI:** Formulate ethical guidelines, rules or regulations as well as assimilate them into policy-making processes to align the

[211] ING (n 19)
[212] Tom B. Brown and others, 'Language Models are Few-Shot Learners' (Cornell University, 22 July 2020) <https://arxiv.org/abs/2005.14165> accessed 20 December 2024
[213] Pamela Samuelson (n 60)
[214] Alesia Zhuk (n 1)

development of AI with social values or norms such as fairness, transparency, accountability, and privacy.[215]

- **Strengthen transparency and accountability:** Adopt a transparent approach in using data to train AI models as well as in how the algorithms work because transparency can establish trust and secure accountability which is of paramount importance in situations where there are bias or unethical outcomes.[216]
- **Uphold collaboration among different jurisdictions:** Since AI technological development and advancement are borderless, it is very important to establish collaboration and cooperation among different countries and regions. Harmonization of AI copyright laws is imperative as it can help tackle cross-border challenges and create a united legal framework.[217]
- **Strengthen public awareness and education:** Raise awareness and educate the public about AI and its impact on intellectual property rights. Conduct workshops, seminars, and open discussions to disseminate knowledge and solve problems.[218]
- **Hybrid copyright model:** Implement a hybrid copyright model that identifies AI-generated content based on a combination of human input and AI creativity. The model will accommodate works that involve significant human supervision as well as those created primarily by AI.
- **Ethical AI Certification:** To ensure that AI systems follow moral guidelines, openness requirements, and responsible usage of protected content, implement an Ethical AI Certification Scheme.
- **AI Transparency Registry:** Establish an AI Transparency Registry where developers publicly disclose the origins of copyrighted materials used in training and the methods used to produce AI content. The registry will enhance accountability and trust.

By implementing these recommendations, governments, attorneys, and researchers may create a fair, progressive legal framework that promotes preserving intellectual property rights and the innovation of AI technologies. It is intended that by using this strategy, moral principles and active intellectual property rights protection will be preserved even while innovation thrives.

[215] Luciano Floridi and others (n 41)
[216] Mike Ananny and Kate Crawford (n 53)
[217] UK Government (n 3)
[218] Meredith Whittaker and others (n 54)

CONCLUSION

AI is recasting many businesses and trades. While AI has realized many important innovations, it has also brought forth complicated problems, especially in relation to intellectual property rights. Content produced by AI seriously upends old concepts of authorship and ownership, raising legal and ethical issues.[219] Hong Kong's recent public consultation on amending the Copyright Ordinance[220] reflects Hong Kong's efforts to balance the advancement of AI and the protection of rights of the creators.

Key recommendations include clarifying authorship and ownership, developing specific regulations on AI, promoting ethical AI development, encouraging transparency and accountability, promoting international cooperation, and raising public awareness.[221] These steps are critical to creating a balanced and forward-looking legal framework that supports both intellectual property protection and the continued growth of AI technologies.

Looking to the future, the continued progress of AI requires continuous dialogue and reform. Governments, legal practitioners and researchers must collaborate to adapt the legal framework to the dynamic landscape of AI, protecting intellectual property rights while encouraging creativity. This ongoing effort will help maintain a resilient and forward-looking intellectual property rights system in Hong Kong and beyond.[222]

[219] Alesia Zhuk (n 1)
[220] HK Intellectual Property Department (n 2)
[221] UK Government (n 3)
[222] Alesia Zhuk (n 1)