

University of Essex

MSc Artificial Intelligence

Module: UAI_PCOM7E January 2025 A

Unit 3: Collaborative Discussion – Business Use Cases for AI

Initial Discussion

As a cloud developer, one facet of my work involves building out back end systems for detecting and remediating cases of copyright infringement of the company's social media assets; for example, video clips shared on social media platforms by fans of the company's movies and TV series. Some instances of media sharing are approved and encouraged by the company, such as promotional trailers. Others are not approved and subject to copyright take down actions.

Novel cases of infringement have started to crop where fans of protected content use generative AI platforms to modify the source video tracks, most often to generate fan works based on the original content, such as by extending scenes or changing the characters in scenes. This material can be more difficult to detect than straightforward instances of piracy, since the original content was heavily modified and stripped of its identifying metadata. Depending on the type and extent of the transformation of the original material, however, it still can be subject to copyright protection.

As such, a novel use for AI systems would be to automate detection and reporting of this type of unsanctioned modification of protected intellectual property, rather than relying on human employees to find and act on it. The challenge, however, is that generative AI platforms are rapidly changing, with new ones released to the public regularly, which makes defining a usable programmatic taxonomy for markers of infringement in such video files difficult (Lin et al., 2024).

Reference

Lin, L., Gupta, N., Zhang, Y., Ren, H., Liu, C.-H., Ding, F., Wang, X., Li, X., Verdoliva, L. and Hu, S. (2024). *Detecting Multimedia Generated by Large AI Models: A Survey*. [online] arXiv.org. doi:<https://doi.org/10.48550/arXiv.2402.00045>.

Peer Response No. 1

It is imperative to know AI's outstanding impact on copyright infringement on social media. Theoretically, there is a need for the invention of AI systems for the detection of unsanctioned modification of intellectual property since the integrity of the report wouldn't be compromised compared to absolute dependence on humans for the same detection.

However, there are two sides to the innovation. There are glaring advantages, but there are also tangible challenges created which could be solved by leveraging existing AI systems to point out specific markers of AI-generated content such as inconsistency in facial features and lightning that can identify video tampering. Furthermore, Work closely with other AI, media, and legal stakeholders to standardise infringement markers and share data regarding emerging generative AI methods. The idea of collaboration can ensure that updates to the taxonomy are important, timely, and comprehensive.(Stanger et al, 2023).

References

Not provided.

Peer Response No. 2

The piece you wrote is insightful, well-organized, and backed by numerous reliable sources. Outlined are a couple ways to make it even better, briefly discuss how AI is used in many different industries currently; elaborate on concerns regarding ethics; and, rather than simply reiterating the advantages, simply discuss possible future developments in AI.

References

Not provided.

Peer Response No. 3

Your discussion underlines a very current challenge in copyright enforcement within the digital era. With the rise of generative AI, there definitely has been some complication regarding old ways of identifying copyright infringement, especially where AI-generated modifications blur the lines between original and transformative contents. Thus, this ownership and fair use is increasingly a complex matter-one that requires creative solutions on the part of organizations such as Warner Bros. Discovery regarding tracking and managing their intellectual property.

The proposal to use AI in detecting changes made by AI is hugely logical and called for. Indeed, automated systems can enhance efficiency and reduce the workload of human analysts. However, as you duly pointed out, the rapid changes in generative AI platforms face significant challenges toward creating a fixed framework for infringement detection. According to the studies of the governance of AI, legal and ethical consideration over AI-generated content has to be done over and over to make sure companies not only secure their intellectual property but also follow the emerging standards in respect to fair use and derivative works (Fabregue, 2023).

Similarly, recent advancements in AI detection models indicate that while deep learning techniques can identify AI-generated content, their effectiveness is limited by the dynamic and ever-changing nature of generative models (Ziosi et al, 2022). This aligns with findings on cybersecurity challenges, where adaptive AI-driven models must evolve in real-time to counter emerging threats (Oliha et al, 2024).

In conclusion, the rapid evolution of generative AI brings forth a number of challenges and opportunities regarding copyright enforcement. While automated detection systems can increase efficiency, they need to be adaptive to-and in continuous refinement of the shifting landscape presented by AI-generated content.

References

Fabregue, B. (2023) Artificial Intelligence Governance in Smart Cities: A European Regulatory Perspective. *Journal of Autonomous Intelligence*, [online] Available at: <https://jai.front-sci.com/index.php/jai/article/view/672>.

Sunday, J., Biu, W. and Obi, C. (2024). Securing the smart city: A review of cybersecurity challenges and strategies. *Open access research journal of multidisciplinary studies*, 7(1), pp.094-101. doi:<https://doi.org/10.53022/oarjms.2024.7.1.0013>.

Ziosi, M., Hewitt, B., Juneja, P., Taddeo, M. and Floridi, L. (2023). Smart Cities: Reviewing the Debate About Their Ethical Implications. *Digital ethics lab yearbook*, pp.11–38. doi:https://doi.org/10.1007/978-3-031-28678-0_3.

Peer Response No. 4

It is imperative to know AI's outstanding impact on copyright infringement on social media. Theoretically, there is a need for the invention of AI systems for the detection of unsanctioned modification of intellectual property since the integrity of the report wouldn't be compromised compared to absolute dependence on humans for the same detection (Sinha et al, 2024).

However, Khaleel (2023) states that there are two sides to the innovation. There are glaring advantages, but there are also tangible challenges created which could be solved by leveraging existing AI systems to point out specific markers of AI-generated content, such as inconsistency in facial features and lightning that can identify video tampering.

Furthermore, Work closely with other AI, media, and legal stakeholders to standardise infringement markers and share data regarding emerging generative AI methods. The idea of collaboration can ensure that updates to the taxonomy are important, timely, and comprehensive (El-Khozondar et al, 2024).

References

Khaleel, M., Nassar, Y. and El-Khozondar, H. (2023). Towards Utilizing Artificial Intelligence in Scientific Writing. *Int. J. Electr. Eng. and Sustain.*, [online] pp.45–50. Available at: <https://ijees.org/index.php/ijees/article/view/76>.

Sinwar, D., Sinha, A., Sapra, D., Singh, V. and Raghuwanshi, R. (2024). Assessing and Mitigating Bias in Artificial Intelligence: A review. *Recent advances in computer science and communications*, 17(1). doi:<https://doi.org/10.2174/2666255816666230523114425>.

Discussion Summary

In my initial post, I proposed a use case for AI systems in identifying novel instances of copyright infringement via exploiting generative LLMs to create unapproved modifications to protected video assets in the entertainment industry.

In peer responses, the following potential benefits and challenges were identified:

1. The use of properly trained and implemented AI systems could reduce the risk of human error or human bias in identifying protected assets (Sinwar et al, 2024).
2. Such systems would face the challenge of keeping pace with the rapid development of new generative LLMs (Lin et al, 2024; Ziosi et al, 2023).
3. Such systems would also face the challenge of integrating with varying legal and regulatory schemes, depending on the locale and jurisdiction in which they are used (Fabregue, 2023). In other words, what may constitute actionable infringement in one regulatory jurisdiction may not in another, and any practical system needs a reliable mechanism to efficiently and reliably distinguish between different regulatory standards.
4. For any such systems to be usable in the practical sense, they should be developed in a cross-disciplinary manner and should draw upon multiple relevant areas of domain expertise, not only technical expertise (Khaleel, Nassar, and El-Khozondar, 2023).

I agree that these points of discussion are valid; in my view, one of the most challenging issues would be the third, training such systems to accurately reflect jurisdictional standards for identifying actionable copyright infringement, given the multiplicity of regulatory standards worldwide.

Taking that same concept one step further, operating within varying regulatory standards would be a baseline challenge to overcome: any automated system would likely still require human supervision to either confirm or disqualify any given identification as properly subject to enforcement action. In other words, while automated systems may act as productivity enhancers to human actors, they are unlikely to be capable of acting as unsupervised arbiters for enforcement purposes.

References

Fabregue, B. (2023) Artificial Intelligence Governance in Smart Cities: A European Regulatory Perspective. *Journal of Autonomous Intelligence*, [online] Available at: <https://jai.front-sci.com/index.php/jai/article/view/672>.

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Ziosi, M., Hewitt, B., Juneja, P., Taddeo, M. and Floridi, L. (2023). Smart Cities: Reviewing the Debate About Their Ethical Implications. *Digital ethics lab yearbook*, pp.11–38. doi:https://doi.org/10.1007/978-3-031-28678-0_3.