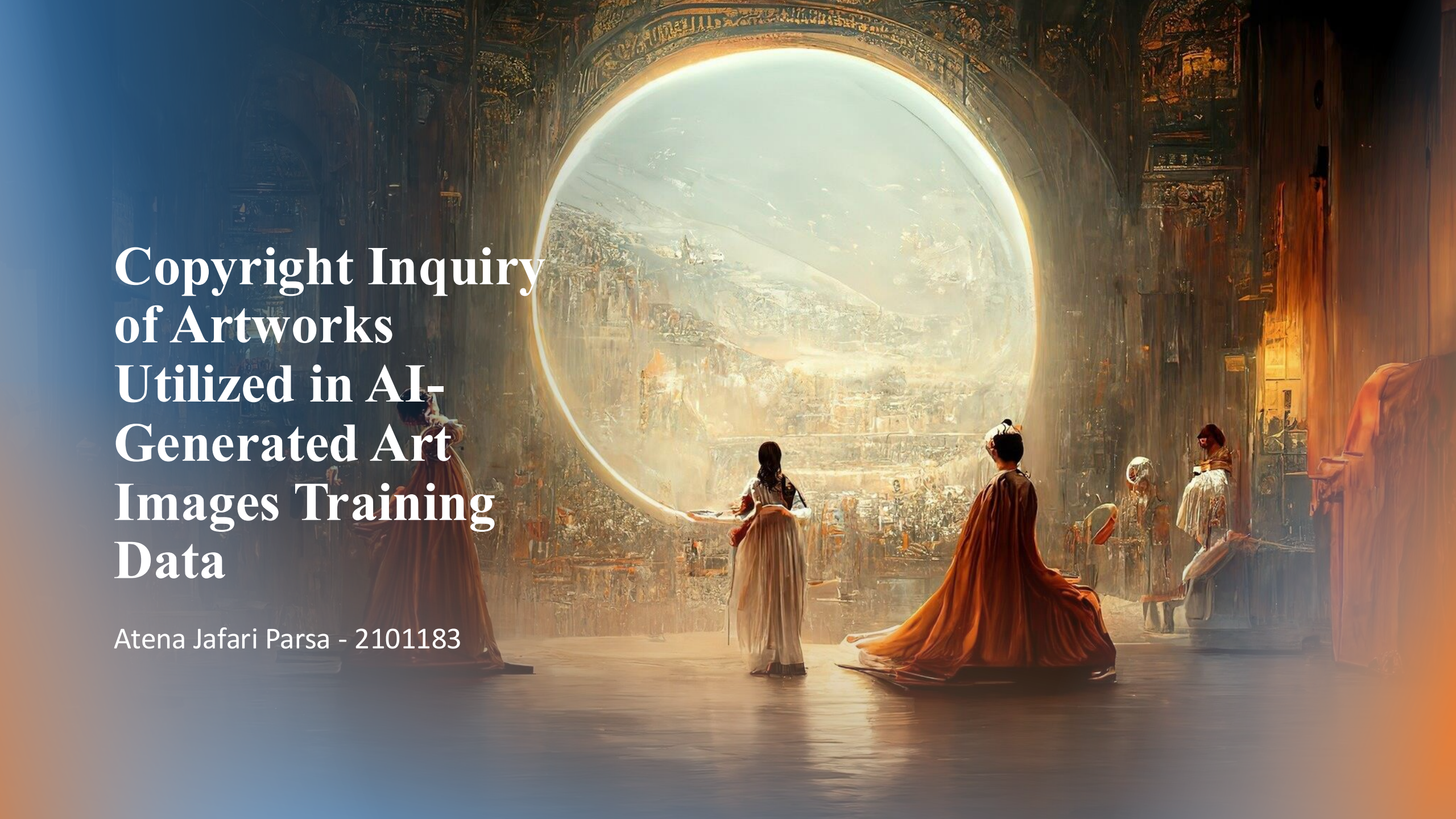


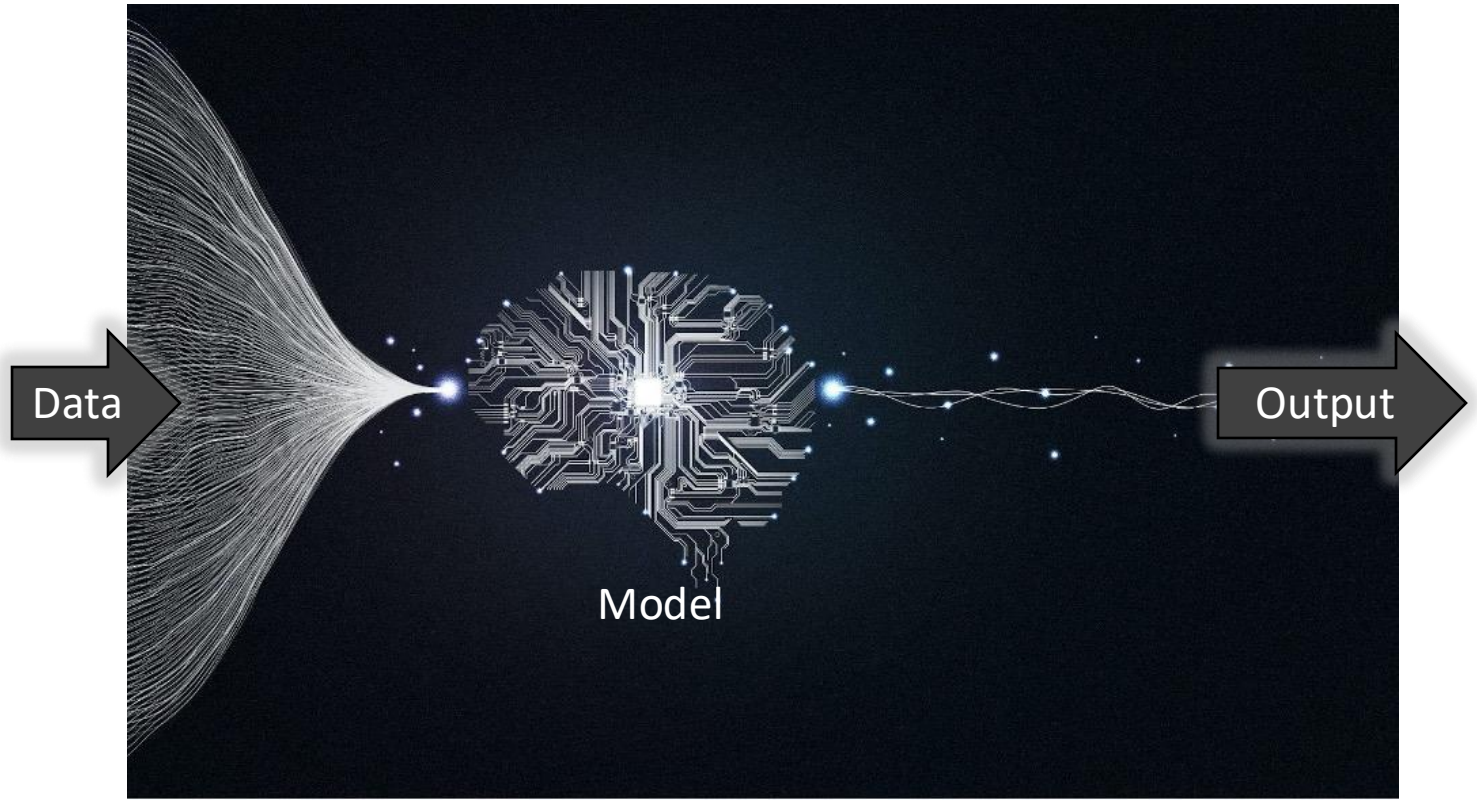
Copyright Inquiry of Artworks Utilized in AI-Generated Art Images Training Data

Atena Jafari Parsa - 2101183

Introduction

- How does AI work?
- learns from already-existing data (training data)
- understands the patterns
- applies them to unseen data

- AI & Art?



The Problem with AI-generated Art

- Many artists are extremely unhappy with AI art generators as they are trained using data scraping on artworks that lack any consent given by the artists (O'Brien, 2023).
- Why is it important?
- AI-driven art disregards artists' intellectual property rights.

- The study aims to understand to what extent current AI art generators respect artists' intellectual property rights and to identify existing and possible ways to make the use of such artworks more ethical.

Research Questions

To what extent does the current AI art generators respect artists' intellectual property rights?

What are the possible ways to improve AI-generated art so that it would not disregard the work of the artists?

Literature Review

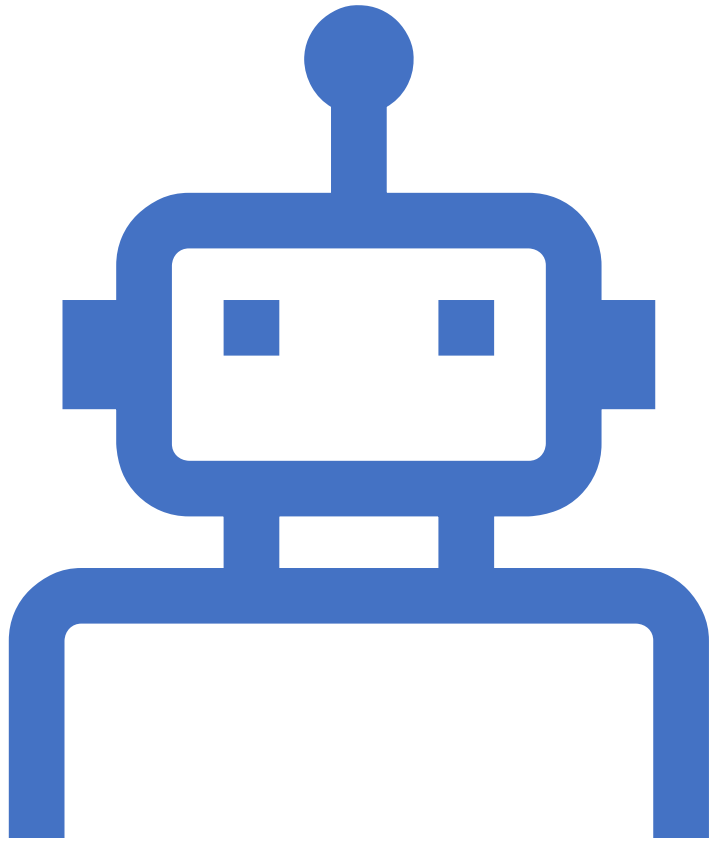
- AI and Copyright
  - Bukhari (2024) states that preserving original works that are produced by human creativity is the purpose of establishing copyright law.
  - Considering the traditional copyright frameworks, artificial intelligence is most probably not accepted as an “author”.
  - To determine the “author or authors” of AI-generated works, no explicit rules have been established, meaning that as a matter of fact, no one “owns” the AI-driven works (Zirpoli, 2023).
  - Hence, lots of regulations are necessary in laws and ethics as we have entered the era of computers.

Literature Review cont'd

- The Solution Proposed by Zhu, et al. (2024) to reduce the risk of copyright infringement
- Designing unique watermarks for the artwork(s) of every artist and incorporating them into the artworks before the training process
- During the training process, the watermarked artworks are fed to the algorithm.
- The model learns the pattern of the watermarks as well as the artworks’.
- Possible to check the existence of the features of the watermarks in the generated images to prevent potential copyright infringements beforehand

Literature Review cont’d

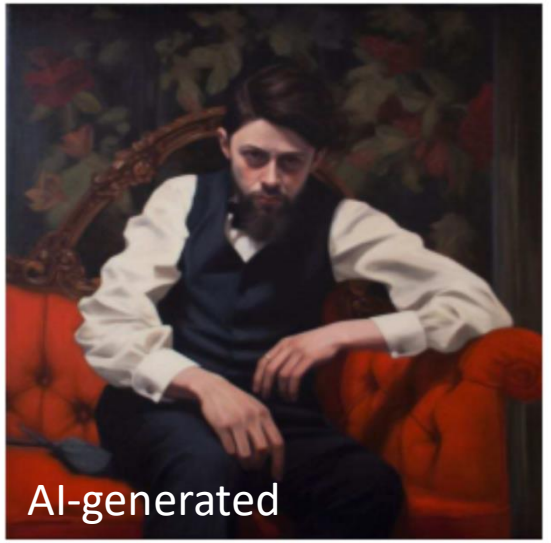
- The proposed solution has limitations.
- The original artworks utilized in training need manipulation which reduces the quality of the generated image (Zhang, et al., 2024).
- The original artworks have to be manipulated before being shared which is not practical as a lot of artworks have already been shared without the AI-generated watermarks (Chen, et al., 2024).

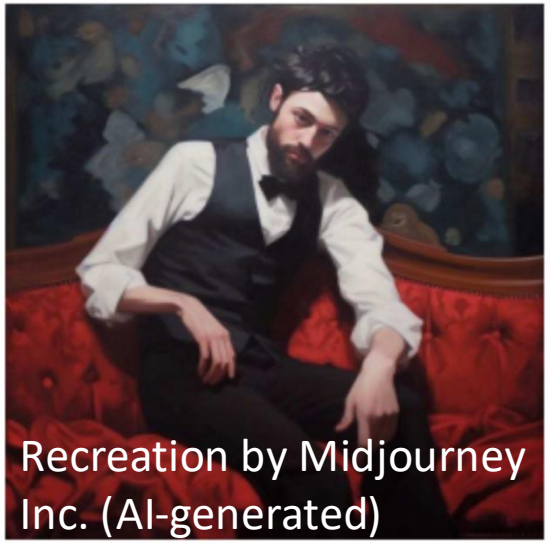


Copyright Infringement Case Study

- According to Schrader (2023), the original lawsuit was initiated by three artists.
- The legal representation for the group of artists who filed a class action lawsuit against three A.I. companies—Midjourney Inc, DeviantArt Inc, and Stability A.I.—has submitted a revised complaint in response to the court's concerns following the dismissal of some claims by the judge.
- A.I. image generators replicate artworks and compete with or replace them in the market (Newton & Dhole, 2023).
- To address these concerns, it is necessary to develop robust legal frameworks that protect artists' rights.
- This could involve clearer guidelines on data usage, strict regulations on AI model training, and more effective mechanisms for identifying and penalizing copyright violations.


Artwork Created by Karla Ortiz


AI-generated


Recreation by Midjourney Inc. (AI-generated)


AI-generated

Methods

Design of the Study

- Qualitative
- Literature Review
- The study investigates the legal and ethical issues related to the use of copyrighted artworks in AI-generated art training data by leveraging content analysis and using the inverted triangle method.

Data Collection Procedures

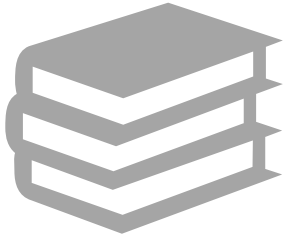
- Academic journal articles and conference papers on AI, copyright law, and digital art
- News reports
- Documents were selected based on relevance to the research questions, credibility of the source, and the depth of discussion on the implications of AI on intellectual property rights.

Methods cont’d

Internal Validity

The sources most relevant were generally about the ethical and legal concerns regarding AI-Generated art.

Thus, the researcher was likely to be negatively biased about the procedure behind AI-generated images and emphasize the disadvantages rather than searching for solutions to prevent legal and ethical issues caused by this technology.



Data Analysis

The study employs content analysis to interpret data collected from the literature review.

The final analysis was presented in a narrative format, supported by an example from the literature.

This approach simplifies understanding the legal and ethical challenges associated with AI-generated art.

References

- Bukhari, S. W. R., Hassan, S. U., & Aleem, Y. (2024). Impact of artificial intelligence on copyright law: Challenges and prospects. *Journal of Law & Social Studies* (JLSS), 5(4), 647-656.
- Du, L., Zhu, Z., Chen, M., Ji, S., Cheng, P., Chen, J., & Zhang, Z. (2024). Auditing artist style pirate in text-to-image generation models. In Workshop on AI Systems with Confidential Computing (AISCC) 2024 (pp. 26). Author. https://www.ndss-symposium.org/wp-content/uploads/aiscc2024-9-paper.pdf
- Newton, A., & Dhole, K. (2023). Is AI art another industrial revolution in the making? arXiv. https://arxiv.org/abs/2301.05133
- O'Brien, S. (2023, November 29). AiArt: Why some artists are furious about AI-produced art[news]. Computer.org. https://www.computer.org/publications/tech-news/trends/artists-mad-at-ai
- Schrader, A. (2023, December 4). Lawyers for artists suing AI companies file amended complaint after judge dismisses some claims. Artnet News. https://news.artnet.com/art-world/lawyers-for-artists-suing-ai-companies-file-amended-complaint-after-judge-dismisses-some-claims-2403523
- Zirpoli, C. T. (2023). Generative artificial intelligence and copyright law. University of Nebraska [article]–Lincoln. https://digitalcommons.unl.edu/scholcom/243

References

Anantrasirichai, N., Bull, D. Artificial intelligence in the creative industries: a review. *Artif Intell Rev* **55**, 589–656 (2022). https://doi.org/10.1007/s10462-021-10039-7

Bellaiche, L., Shahi, R., Turpin, M.H., & et al. (2023). Humans versus AI: whether and why we prefer human-created compared to AI-created artwork. *Cogn. Research, 8*, 42. https://doi.org/10.1186/s41235-023-00499-6

Brewer, T. (2023). *Does AI art breach UK copyright law?* [Master's thesis, Lancaster University]. ResearchGate. https://www.researchgate.net/publication/377452286_Does_AI_art_breach_UK_copyright_law

Burns, T. (2024, May 16). How AI could make workers more productive – but paid less. *The Hill*. https://thehill.com/policy/technology/4663552-how-ai-could-make-workers-more-productive-but-paid-less/

Bukhari, S. W. R., Hassan, S. U., & Aleem, Y. (2024). Impact of artificial intelligence on copyright law: Challenges and prospects. *Journal of Law & Social Studies (JLSS), 5*(4), 647-656. [First link: https://www.advancelrf.org] [Second link: https://www.researchgate.net/profile/Syed-Wajdan-Rafay-Bukhari/publication/377334695_Impact_Of_Artificial_Intelligence_on_Copyright_Law_Challenges_and_Prospects/links/65a0d384c77ed94047716280/Impact-Of-Artificial-Intelligence-on-Copyright-Law-Challenges-and-Prospects.pdf]

CNN. (2022, May 11). IBM Deep Blue computer beats Garry Kasparov, chess champion, in 1997 [Video]. CNN. https://edition.cnn.com/videos/business/2022/05/11/ibm-deep-blue-computer-beats-garry-kasparov-chess-champion-1997-vault-ig-orig.cnn

Du, L., Zhu, Z., Chen, M., Ji, S., Cheng, P., Chen, J., & Zhang, Z. (2024). Auditing artist style pirate in text-to-image generation models. In *Workshop on AI Systems with Confidential Computing (AISCC) 2024* (pp. 26). Author. https://www.ndss-symposium.org/wp-content/uploads/aiscc2024-9-paper.pdf

Epstein, Z., Hertzmann, A., & The Investigators of Human Creativity. (2023). Art and the science of generative AI: Understanding shifts in creative work will help guide AI's impact on the media ecosystem. *Science, 380*(6650), 1110-1111. https://doi.org/10.1126/science.adh4451

Franceschelli G, Musolesi M. Copyright in generative deep learning. *Data & Policy*. 2022;4:e17. doi:10.1017/dap.2022.10

Gota Morota, Ricardo V Ventura, Fabyano F Silva, Masanori Koyama, Samodha C Fernando, BIG DATA ANALYTICS AND PRECISION ANIMAL AGRICULTURE SYMPOSIUM: Machine learning and data mining advance predictive big data analysis in precision animal agriculture, *Journal of Animal Science*, Volume 96, Issue 4, April 2018, Pages 1540–1550, https://doi.org/10.1093/jas/sky014

Grant, D. (2023, May 5). New US copyright rules protect only AI art with 'human authorship'. *Art & Technology // News*. https://www.theartnewspaper.com/2023/05/04/us-copyright-office-artificial-intelligence-art-regulation

Hughes, W. (2023, August 18). Judge rules that strictly AI-generated artworks can't be copyrighted: The messy situation surrounding the "authorship" of AI art has taken another turn. *AV Club*. https://www.avclub.com/judge-rules-that-strictly-ai-generated-artworks-cant-be-1850754193

Jackson, T. E. (2017). Imitative Identity, Imitative Art, and "AI: Artificial Intelligence." *Mosaic: An Interdisciplinary Critical Journal*, *50*(2), 47–63. http://www.jstor.org/stable/45158927

Koivisto, M., Grassini, S. Best humans still outperform artificial intelligence in a creative divergent thinking task. *Sci Rep* **13**, 13601 (2023). https://doi.org/10.1038/s41598-023-40858-3

Manyika, J. (2022). Getting AI Right: Introductory Notes on AI Society. *Daedalus*, *151*(2), 5–27. https://www.jstor.org/stable/48662023

McCormack, J., Bown, O., Dorin, A., McCabe, J., Monro, G., & Whitelaw, M. (2014). Ten questions concerning generative computer art. *Leonardo, 47*(2), 135–141. http://www.jstor.org/stable/43834149

Newton, A., & Dhole, K. (2023). Is AI art another industrial revolution in the making? *arXiv*. https://arxiv.org/abs/2301.05133

O'Brien, S. (2023, November 29). AiArt: Why some artists are furious about AI-produced art. Computer.org. https://www.computer.org/publications/tech-news/trends/artists-mad-at-ai

Sapkota, T. P., Kunwar, S., Bhattarai, M., & Poudel, S. (2020). Artificial intelligence that are beneficial for law. *US-China Law Review, 17*(5), 217-223. https://doi.org/10.17265/1548-6605/2020.05.004

Schrader, A. (2023, December 4). Lawyers for artists suing AI companies file amended complaint after judge dismisses some claims. Artnet News. https://news.artnet.com/art-world/lawyers-for-artists-suing-ai-companies-file-amended-complaint-after-judge-dismisses-some-claims-2403523

Zawacki-Richter, O., Marín, V.I., Bond, M. *et al.* Systematic review of research on artificial intelligence applications in higher education – where are the educators?. *Int J Educ Technol High Educ* **16**, 39 (2019). https://doi.org/10.1186/s41239-019-0171-0

Zirpoli, C. T. (2023). Generative artificial intelligence and copyright law. University of Nebraska - Lincoln. https://digitalcommons.unl.edu/scholcom/243