International Journal on Management Education & Emerging Technology
ISSN: 2583-9438

Ethical Implications Of Deepfake Technology In The Context Of Pornography Through A Kantian Perspective

Reden Rioflorido[1], Rheca De Robles[2], Andrae Emralino[3], Kizelle Adams Bernardo[4] Claire Tian Flores[5], Richard Christian Florentino[6], Chad Almer De Guzman[7]
[1,2,3,4,5,6,7] *Polytechnic University of the Philippines – Parañaque Campus*

Abstract

The widespread use of deepfake technology becomes apparent on a global scale, with a significant presence of adult women in the industry highlighting its extensive use. Using Kantian framework, this study explores the ethical violations of deepfake technology in the adult entertainment industry focuses on the challenges of creating explicit content without consent, recognizing the need for transparency, accountability for non-consensual content, and raising public awareness. The study used the Error Level Analysis technique to detect potential deepfake manipulations in digital images. Using a qualitative methodology, we surveyed only male participants to understand their perceptions towards deepfake technology. The findings revealed concerns for non-consensual content creation, privacy, and individual rights. Future works suggest the need for enhanced regulatory frameworks, content moderation measures, and industry-wide guidelines to address the ethical dilemmas arising from deepfake technology's rapid progress.

Article Info

Keywords:
Kantian Ethics, Artificial Intelligence, Deepfake Technology, Pornography.

Date of Submission: 2/04/2023
Date of Review: 26/06/2023
Date of Acceptance: 18/08/2023
IJMEET / Volume 1, Issue 3, 2023

INTRODUCTION

As of 2022, the global population stood at around 7.95 billion, with females accounting for approximately 49.69% of the total population (World Bank, 2023). About 1.7% of adult women have engaged in the pornography industry at some point in their lives. This represents the prevalence of the pornography industry in our society. It shows that a significant portion of adult women have participated in adult entertainment industry, indicating the widespread impact of pornography.

Kantianism is a moral system grounded in principles of duty, autonomy, and categorical imperative (Quinn, 2015). Kant argued that ethical behavior should be based on universal principles that are applicable in different situations and every individual should always be worthy of respect and dignity (Misselbrook, 2013). With the excessive use of artificial intelligence, we, the researchers, argued this ethical theory is relevant in discussion as it includes valid reactions to unethical actions, particularly in deepfake technology in the context of pornography.

ML (Machine Learning) involves the development of algorithms designed to learn and adapt from presented data, empowering systems with prediction and decision-making capabilities. (LeCun et al., 2015). On the other hand, DL (Deep Learning) uses neural networks which represent nodes that send information to the model's learning process. The layers involve receiving data, processing information, and producing the results therefore coined the term "deep" because it can extract features from the raw input, improving the model's ability to recognize and represent patterns. (Deng & Yu, 2014). AI (Artificial Intelligence) together with ML and DL have advanced quickly, allowing the evolution of tools and techniques using media for manipulation (Soori et al., 2023). One example use of manipulated media is "Deepfake" technology, which mimics human faces and voices, based on deep learning algorithms that allow them to blend reality with ease (de Ruiter, 2021). According to Nguyen et al., (2022), they discovered that deepfakes are produced using deep learning techniques and show realistic videos or images enabling human-like manipulation. The initial development of deepfake technology already had explicit content using the faces of individuals including famous celebrities (Rini et al., 2022) and was termed in late 2017 after an unnamed Reddit user who used deep learning techniques to switch another person's face for explicit content (Albahar & Almalki, 2019). As deepfake became popular, several studies have already shown that deepfake technology has become a tool to create manipulated content. The study of Lee and Mirsky (2021) suggests that it was found how simple and accessible it was to use this technology for unethical purposes such as attacking innocent people by damaging their reputation. Users who create deepfake content may use any type of media available such as images or recordings to alter or manipulate that misrepresent someone make statements that different from their actual words or actions (Okolie, 2023; Khichi et al., 2021; Chesney & Citron, 2019). The use of deepfake technology has become more widespread in the adult content to create explicit material that showcases the appearance of celebrities, public figures, or individuals who may not be aware of it (Semwal, 2020). This raises ethical concerns regarding consent and the possibility of damaging the reputations of these individuals. Consent refers to the agreement where two parties mutually agree on certain situations. In deepfake technology, Chesney & Citron (2019) defined the distribution of pictures that are sexually explicit without permission. As deepfake technology rapidly becomes a threat to society especially targeting women without their consent, deepfake technology is becoming more popular because it allows users to make realistic videos and audio that they can easily distribute through the internet. (Lucas, 2022). This raises serious ethical and privacy concerns, as it involves the potential misuse of deepfake technology for non-consensual and harmful
purposes (de Ruiter, 2021).

Transparency, a crucial aspect in the realm of deepfake detection, empowers users to discern between authentic and manipulated content, fostering trust, and promoting a responsible integration of this technology. In the pursuit of transparency, ELA (Error Level Analysis) emerges as a technique for identifying potential manipulations in digital images. While some deepfakes are produced through traditional computer-graphics approaches, a prevalent and recent mechanism for deepfake creation. This technique involves using advanced computer programs called deep learning model known as Generative Adversarial Networks (GANs), which are usually used tasks related to computer vision (Nguyen et al., 2022). However, in the context of detecting manipulated images, ELA provides more easy approach. Zhang & Zhao (2020) used and concluded that ELA based on detecting variations in compression levels within an image, offers a transparent means of assessing

potential manipulations. Unlike GANs, ELA involves a systematic analysis of error levels in JPEG (Joint Photographic Experts Group) images. By analyzing the compression levels, ELA aids in the identification of potential deepfake manipulations. The choice of ELA analysis in our study aligns with the need for a transparent and widely applicable approach, given that JPEG is the standard image format on the internet.

Accountability is a fundamental aspect of deepfake technology. Individuals engaged in creating, sharing, or interacting with deepfakes must assume responsibility for their actions (Dagar et al., 2022; Öhman, 2021). The ethical dilemmas surrounding identity and its association with deepfakes emphasize the challenges of holding individuals responsible, particularly when it involves altering someone's appearance and unique attributes. The impact of synthetic media on individual rights and the pressing need for accountability to prevent the exploitation of identities are significant concerns. While the focus may be on safeguarding reputation, as highlighted in Öhman's study (2021), it is essential to establish systems to hold accountable those who produce and disseminate manipulated media intended to cause harm.

Raising public awareness is a process that educates individuals and improves their awareness of specific issues, risks, or phenomena. The lack of public awareness concerning deepfake technology is particularly concerning in the era of artificial intelligence. Deepfake technology is rapidly evolving and advancing. Patel et al., (2023) explain that humans are increasingly losing the ability to differentiate between authentic and manipulated videos. The lack of awareness leaves individuals vulnerable to false information, creating difficulties for them when identifying between authentic and manipulated content. As a result, this creates opportunities for malicious actors to target individuals and spread false information, allowing deepfakes to remain undetected (Al-Khazraji, 2023).

This study will be guided by Kantian ethics as a framework to examine the ethical implications of deepfake technology use in the pornographic industry. It seeks answers with a primary focus on respecting consent, promoting transparency, ensuring accountability for non-consensual content, and promoting public awareness.

LITERATURE REVIEW

This section addresses the ethical considerations in deepfake technology in the context of pornography through the five variables: Respecting Consent, Promoting Transparency, Accountability for Non-consensual Content, Promoting Public Awareness and addressing the rapid growth of pornographic industry. Each section provides insights, viewpoints, and addressing challenges.

Respecting Consent

According to Jacobsen & Simpson (2023), they emphasized the importance of consent respecting the rights and autonomy of an individual. The study explained the significance of obtaining consent to prevent abuse of using deepfake technology, especially the production of non-consensual materials and how such content, particularly when depicting women violates their autonomy and dignity. Despite the growing influence of deepfake technology, this calls for enforcing permission for content creation and distribution to protect individuals from abuse and exploitation. The research also suggests that addressing deepfake issues requires an approach beyond detection, focusing on ethical implications. When it comes to non-consensual deepfake pornography, digital content that features a person's face in explicit material is not allowed to be included (de Ruiter, 2021). Additionally, the study states while deepfakes could potentially violate moral standards, but they may not necessarily be morally incorrect because technology can be used for beneficial purposes.

Promoting Transparency

Plaisance (2007) asserts that Kant's work establishes a connection between the integrity of actions and human dignity. The significance of truth lies not only in preventing negative consequences of lying and deception but also in fulfilling our responsibility to respect the rational agency and free will of all individuals with whom we engage in communication.". Kant deemed that respecting and valuing the truth is a way of showing that each person is important and has the freedom to make their own choices. When we choose to be
honest in what we do and say, it's not just about following a moral duty. It's also about helping to build a community where everyone is treated as valuable individuals, not just as tools for someone else's goals. So, according to Kantian ethics, telling the truth is important because it's a moral obligation that comes from

recognizing and protecting the ability of each person to think and act freely, which is something we all share as humans.

Accountability for Non-consensual Content

The moral and ethical implications of utilizing someone else's likeness using manipulated media without a person's consent are the main concerns in deepfake technology as discussed by Öhman et al., (2023). The study concluded how difficult it is to determine who is responsible when someone's identity is used for malicious activities. The article concluded that determining responsibility for improper use of someone's identity is challenging. To hold individuals or entities accountable, ethical, and legal norms must be established to safeguard people from having their identities being manipulated. Novelli et al., study (2023), they examined the difficulties in ensuring accountability. It also explores the values, practices, and safety measures that should be taken to achieve compliance, report, and enforcement. In applying this analysis to AI, they adopted a goal-based approach to assess policy strategies, considering some factors such as proactive or reactive use to hold people accountable.

Promoting Public Awareness

Story & Jerkins (2023), states that nonconsensual distribution of deepfake pornography is wrong as it violates a person's right to protect their identity, therefore violating the Kantian principle of treating individuals as ends in themselves. Increasing people's knowledge and consciousness is crucial, reducing the amount of potential misuse of deepfake technology (Mahmud et al., 2021). The promotion of public awareness about the ethical implications of deepfake technology, particularly in the pornographic industry, can be approached using Kantian principles. The study highlights the importance of being aware of nonconsensual deepfakes due to their high degree of immediacy, aligning with the Kantian principle of autonomy. Al-Khazraji et al., (2023) investigates how deepfakes can be spotted through the spread of false information might serve potential consequences on public trust. To achieve public awareness, the study recommends mitigation strategies, which involve advanced technology for detection of deepfakes and strengthening platform policies. Moreover, the study of Westerlund (2019), to combat the difficulties associated with deepfake technology, enhancing legislation and regulation of policies, improve education and training are some of the required measures being taken to combat deepfakes.

Pornography Industry Statistics

The porn industry became the entry point for creation, distribution, and consumption of explicit materials as a form for adult entertainment. The market includes subscription of adult websites, production, and selling of adult toys. The industry is a considerably vast market generating an estimated annual revenue of approximately $172.89 billion. The industry is expected to grow by 2030 reaching nearly $248.18 billion revenue if the current trend persists based on the 2023 adult entertainment market global analysis by Maximize Market Research (2024). A study published by Miller et al., (2020), revealed that at least 40% of men in their 20s and 30s consider themselves regular consumers of pornography. Among these statistics, it is highlighted that 35% of all internet downloads are related to explicit content. Ethical concerns persist, as evidenced by the fact that only 12% of pornography sites require age verification. Pornography industry allows the rise of deepfake porn sites and according to Öhman (2019), it allows the creation and distribution of manipulated content superimposing people's faces on explicit contents through forms of images and videos. The likelihood of female internet users being able to access pornographic websites was found to be lower than that of male users. According to the study by Lewczuk et al., (2022), 27% of female internet users and 47% of male internet users visited pornographic websites, respectively. The analysis also found that, apart from the youngest class of 7–12 years old, access to pornographic websites is less common among women compared to men across all age groups. In this age group, the likelihood of visiting pornographic websites was similar for both sexes, with 27% of women and 25% of boys having access to them.

DATA & METHODOLOGY

This study uses a case study methodology to evaluate specific instances where deepfake technology has raised ethical concerns. This method will provide in-depth analysis of real-life examples, which contributes to a deeper understanding of the ethical challenges posed by deepfake technology.

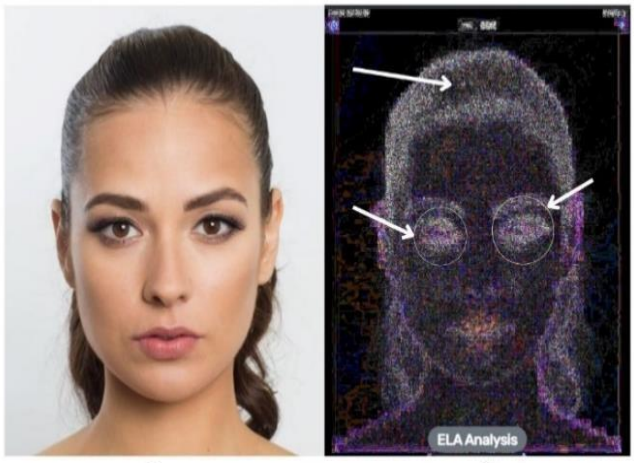
We identified three (3) specific constraints for our investigation. First, it was delimited surveying only male participants since our study is mainly applicable to the experiences and viewpoints of men through deepfake technology in pornography industry. Second, due to time constraints, this study is delimited to a specific sample size, focusing on thirty (30) male participants. We decided to shorten the sample size to ensure a detailed analysis of data. And lastly, we acknowledge the potential advantages of using AI software tools with subscription. However, within the constraints of limited financial resources, the subscription of AI software tools is restricted. Therefore, we only used a free software tool for detecting manipulated content posed by deepfake technology.

Our study employed a qualitative approach to collect and analyze data. This approach is advantageous because it offers a deeper understanding of ethical challenges, allowing for a more detailed examination of moral principles. Furthermore, using qualitative approach will provide deeper insights to real-life situations as stated by Moser & Korstjens (2017).

The survey was conducted on Facebook – a social media platform with its extensive user base, through which we facilitated data collection. Before granting participants access to the Google Form link, we presented them with an overview of the study including its objectives and data gathering process. Before the respondents answered the questionnaire, we ensured their eligibility by confirming that they are of legal age, as our study focuses on a sensitive topic. Additionally, our questionnaire requested permission from respondents, assuring them that their answers will be kept confidential, and their responses will not be used for any other purpose. We also obtained their consent, informing them that they have the option to decline to answer the questionnaire. During this phase, the participants were presented with 10 models and asked to identify whether the image is real or manipulated. Furthermore, our data collection process involved testing a total of 50 models on different websites that were known to create and distribute explicit content made using deepfake technology. All the models were examined through an AI software tool, which helped us determine how common deepfake pornography is on various platforms.

AI Software Tool: Fake Image Detector

The AI software tool used in this study is Fake Image Detector and played a crucial role in our data collection and content analysis. This tool is freely available online and has been developed to identify manipulated or modified images through the implementation of Error Level Analysis (ELA) technique using JPEG image format. ELA as defined by Azhan et al., (2022) is used in digital image analysis to identify areas within an image that may have been manipulated or edited by detecting differences in the compression levels of an image. ELA was experimented with and shows reliability using JPEG compression, image slicing and image retouching (Bakiah Abd Warif et al., 2015). We employed this AI tool due to its demonstrated efficacy as validated by Zhang & Zhao (2019).



As shown in Fig. 1, we performed a series of steps using ELA. First, we used a human model generated by AI (see fig. 1, image A) to test if the image was modified. Second, we resized images to lower pixels to optimize computational efficiency and detect features without compromising detection capabilities. Third, we cropped images to 300x300 pixels, allowing for a more comprehensive examination of facial features while ensuring accuracy and efficiency during testing. And lastly, we convert images to the JPEG format to meet the software detector's requirements. This process addresses image dimensions, format, and resolution, establishing an effective testing for Error Level Analysis (ELA). The Error Level Analysis (ELA) technique plays a role in detecting manipulated images. The white dots in the error maps indicate potential manipulation or compression

within the images. These white dots as encircled (see fig. 1, image B) indicate variations in compression levels, suggesting potential image manipulations. As a result, areas with manipulated or compressed content display a distinct pattern of white dots in the error maps. Interpreting these white dots as indicators of manipulation aligns with ELA's fundamental principle, highlighting regions where compression levels differ, indicating potential image content alterations.

Ethical Consideration

To adhere to the ethical guidelines, our study titled 'Ethical Implications of Deepfake Technology in the Context of Pornography Through a Kantian Perspective,' affirms that we, the researchers, are of legal age to conduct this study. This ensures that we bring the necessary maturity to examine the sensitive discussions of deepfake technology in the context of pornography. Additionally, all respondents who participated in the survey were also of legal age. Furthermore, we prioritize the rights of participants in which the procedures used for gathering data require informed consent allowing them to withdraw without facing any consequences and ensure confidentiality to protect the participant's anonymity.

RESULTS AND DISCUSSION

As shown in table 1, data gathered from the survey reveals that all respondents gave their consent to participate in our study. A total of 30 participants were asked to specify their age range, with 83.3% out of 30 respondents falling within the 18-25 age bracket.16.7% of respondents are aged 26-35. Respondents were also asked to state their highest educational attainment considering that people with different levels of education may have potential knowledge toward the deepfake technology. Results indicate that 50% of respondents are currently in college and 26.7% of respondents have completed their high school, while 20% have completed their bachelor's degree.

Table 1 – Summary of Demographic Profile

Category	Responses	Percentage (%)
Respondent's age range		
Age 18-25	25	83.3
Age 26-35	5	16.7
Age 36-45	0	0
Age 46 and above	0	0
Highest educational attainment		
High school diploma	8	26.7
College undergraduate	15	50
Bachelor's degree	6	20

After gathering their demographic profile, we presented 10 deepfake images to the respondents, allowing them to select between "Yes" option suggests that the image has been deemed a deepfake and "No" option suggests that the image is believed not a deepfake. In addition, we asked the participants about their willingness to pay for a subscription for deepfake pornography websites, giving us insights on their perceptions in deepfake images. Out of 30 participants, only one respondent (3.3%) showed a willingness to pay for deepfake content, while the vast majority of 29 respondents (96.7%) expressed no interest in subscribing to this industry suggesting a minimal level of willingness to support or engage with deepfake content.

As shown in table 2, we observe that models 1, 2, 3, 4, 7 and 10 with 60%, 83.3%, 53.3%, 73.3%, 53.3% and 80% respectively revealed that participants perceived certain characteristics or features in the image presented that led them to believe it was created using deepfake technology, therefore most of the respondents can identify between real and deepfake content. However, in models 5, 6 and 9 shows uncertainty where respondents believed that it was not deepfake with 63.3%, 53.3% and 56.7% respectively.This indicates difficulties in identifying deepfake content. Therefore, it was revealed that some of the respondents were likely deceived.

The findings of this study also revealed that all the models on each of the five platforms were identified as using deepfake technology to produce explicit content. It shows that the models were found to be engaging in

the production of explicit material using deepfake technology. This indicates the prevalent creation, distribution, and consumption of deepfake in adult industry.

Table 2 – Participant Responses Across Ten Models

Category	**Responses**	
Model	Yes(%)	No(%)
1	60	40
2	83.3	16.7
3	53.3	46.7
4	73.3	26.7
5	36.7	63.3
6	46.7	53.3
7	53.3	46.7
8	50	50
9	43.3	56.7
10	80	20

Based on the presented findings, first, we agree with Jacobsen & Simpson (2023), that consent is important in preventing misuse this technology when it comes to non-consensual content. Kantian ethics underscores the importance of respecting each person's autonomy and dignity. The analysis of explicit content across various websites reveals a consistent disregard for consent. This shows ethical concerns where models, regardless of whether they are authentic or synthetic, often do not provide explicit consent to be featured in explicit content. During the testing of 50 models on five websites, it was revealed that these websites openly acknowledge the nature of the material they offer. Transparency, a core principle of Kantian ethics, is upheld through honesty. The findings indicate that content and models are commonly either computer-generated or modified images without the subjects' consent. To enhance transparency, the website should implement age authentication and clearly label the material as deepfake. Additionally, users should be provided with information about the AI origins of the models and any potential risks or ethical concerns associated with viewing such content.

The issue of accountability for non-consensual content is evident in this scenario. The production and distribution of explicit material on pornography websites without the consent of the individual depicted is a matter of concern. Whether the models are AI-generated or manipulated images, addressing the responsibility for the creation and distribution of deepfake pornography is essential. In terms of accountability for non-consensual content, our study aligns with the moral and ethical dilemmas regarding the unauthorized use of people's likenesses that have been clarified by Öhman et al. (2023) and Novelli et al. (2023). Our research contributes to this discussion by highlighting the need for strong legal frameworks to reduce identity theft. Ensuring accountability for their actions is important, as it may discourage the creation and spread of non-consensual deepfakes, while safeguarding the rights and respect of individuals involved. For platforms that host adult content, it is essential to establish strong content moderation measures and addressing reports of non-consensual material are essential steps.

Raising awareness among the public is essential for educating individuals about the potential risks and consequences associated with viewing deepfake pornography. A significant portion of the population may not be aware that the explicit content is manipulated and does not involve real individuals. Through promoting public awareness, individuals can acquire the skills to identify and differentiate deepfake material, appreciate the importance of respecting consent and privacy, and actively support legal and regulatory measures against the dissemination of non-consensual deep fakes. Furthermore, increasing awareness about the use of AI in generating content can help users recognize the fictitious and non-consensual nature of the material. Such actions may include informative campaigns, educational materials for the community, and collaboration with schools and local groups to enhance understanding of online safety and promote positive attitudes towards sexual behavior.

CONCLUSION

It was clearly revealed the importance of transparency in online creation, especially in the use of deepfake technology. We have observed that websites openly acknowledge that they generate their content using AI, specifically deepfake technology. This transparency helps users make informed decisions about their content as it promotes trust and encourages responsible consumption practices using deepfake technology. However, it is essential that one should consider that transparency represents just one aspect of the broader ethical implications surrounding deepfake technology. To further address ethical concerns related in using deepfake technology in the adult entertainment industry, this study recommends future research should focus at respecting consent, promoting responsible content creation, protecting user privacy, and mitigating potential harm. These actions are important to make sure that deepfake technology is used ethically and responsibly on online platforms.

REFERENCES

Albahar, M., & Almalki, J. (2019). Deepfakes: Threats and countermeasures systematic review. Journal of Theoretical and Applied Information Technology, 97(22), 3242-3250

Al-Khazraji, S. H., Saleh, H. H., Khalid, A. I., Mishkhal, I. A. (2023). Impact Of Deepfake Technology on Social Media: Detection, Misinformation and Societal Implications. The Eurasia Proceedings of Science Technology Engineering And Mathematics, 23, 429-441. https://doi.org/10.55549/epstem.1371792

Azhan, N. a. N., Ikuesan, R. A., Razak, S. A., & Kebande, V. R. (2022). Error level analysis technique for identifying JPEG block unique signature for digital forensic analysis. Electronics, 11(9), 1468. https://doi.org/10.3390/electronics11091468

Bakiah Abd Warif, N., Idris, M. Y., Wahab, A. W., & Salleh, R. B. (2015). An evaluation of Error Level Analysis in image forensics. In 2015 5th IEEE International Conference on System Engineering and Technology (ICSET) (pp. 23-28). https://doi.org/10.1109/ICSENGT.2015.7412439

Bhattacharyya, G. (2021). An analysis of Kantian ethics, its influence and applicability in the present era of artificial intelligence. psychologyandeducation.net. https://doi.org/10.17762/pae.v58i2.2917

Chesney, R., & Citron, D. K. (2018). Deep Fakes: a looming challenge for privacy, democracy, and national security. Social Science Research Network. https://doi.org/10.2139/ssrn.3213954

Dagar, D., Vishwakarma, D.K. (2022). A literature review and perspectives in deepfakes: generation, detection, and applications. International Journal of Multimedia Information Retrieval, 11, 219–289 https://doi.org/10.1007/s13735-022-00241-w

de Ruiter, A. (2021). The distinct wrong of Deepfakes. Philosophy & Technology, 34(4), 1311–1332. https://doi.org/10.1007/s13347-021-00459-2

Deng, L. (2014). Deep Learning: methods and applications. Foundations and Trends in Signal Processing, 7(3–4), 197–387. https://doi.org/10.1561/2000000039

Khichi, M., & Yadav, R. K. (2021). A Threat of Deepfakes as a Weapon on Digital Platform and their Detection Methods. In 2021 12th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 01-08). https://doi.org/10.1109/ICCCNT51525.2021.9580031

LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep Learning. Nature, 521, 436-444. http://doi.org/10.1038/nature14539

Lewczuk, K., Wójcik, A., & Gola, M. (2022). Increase in the Prevalence of Online Pornography Use: Objective Data Analysis from the Period Between 2004 and 2016 in Poland. Archives of sexual behavior, 51(2), 1157–1171. https://doi.org/10.1007/s10508-021-02090-w

Lucas, K. T. (2022). Deepfakes and Domestic Violence: Perpetrating Intimate Partner Abuse Using Video Technology. Victims & offenders, 17(5), 647-659. doi:10.1080/15564886.2022.2036656

Maddocks, S. (2020). 'A Deepfake Porn Plot Intended to Silence Me': exploring continuities between pornographic and 'political' deep fakes. Porn Studies, 7(4), 415–423. https://doi.org/10.1080/23268743.2020.1757499

Maximize Market Research Pvt Ltd. (2024). Adult Entertainment Market: Global analysis and forecast. MAXIMIZE MARKET RESEARCH. https://www.maximizemarketresearch.com/market- report/adult-entertainment-market/190504/

Miller, D. J., Raggatt, P., & McBain, K. (2020). A Literature Review of Studies into the Prevalence and Frequency of Men's Pornography Use. American Journal of Sexuality Education, 15(4), 502–529. https://doi.org/10.1080/15546128.2020.1831676
Misselbrook D. (2013). Duty, Kant, and deontology. The British journal of general practice: the journal of the Royal College of General Practitioners, 63(609), 211. https://doi.org/10.3399/bjgp13X665422
Moser, A., & Korstjens, I. (2017). Series: Practical guidance to qualitative research. Part 1: Introduction. The European journal of general practice, 23(1), 271–273. https://doi.org/10.1080/13814788.2017.1375093
Novelli, C., Taddeo, M., & Floridi, L. (2022). Accountability in Artificial Intelligence: What It Is and How It Works. AI & Society: Journal of Knowledge, Culture and Communication. https://doi.org/10.1007/s00146-023-01635-y
Nguyen, T. T., Nguyen, Q. V. H., Nguyen, D. T., Nguyen, D. T., Huynh-The, T., Nahavandi, S., Nguyên, T. T., Pham, Q., & Nguyen, C. M. (2022). Deep learning for deepfakes creation and detection: A survey. Computer Vision and Image Understanding, 223, 103525. https://doi.org/10.1016/j.cviu.2022.103525 Öhman, C. (2022). The identification game: deepfakes and the epistemic limits of identity. Synthese, 200(4), 1-19. https://doi.org/10.1007/s11229-022-03798-5
Okolie, C. (2023). Artificial Intelligence-Altered Videos (Deepfakes), Image-Based Sexual Abuse, and Data Privacy Concerns. Journal of International Women's Studies, 25(2), Article 11. Available at: https://vc.bridgew.edu/jiws/vol25/iss2/11
Ogar, T., & Bassey, S. (2023). The implications of Kantian Ethics for Non-rational Nature/Beings: A Study in Environmental Ethics. International Journal of Environmental Pollution and Environmental Modelling, 6(2), 93-103.
Patel, Y., Tanwar, S., Gupta, R., Bhattacharya, P., Davidson, I. E., Nyameko, R., Aluvala, S., & Vimal, V. (2023). Deepfake Generation and Detection: Case Study and Challenges. IEEE Access, 11, 143296- 143323. https://doi.org/10.1109/ACCESS.2023.3342107
Pornography Industry Statistics. (2024). GITNUX. Retrieved from https://gitnux.org/pornography-industry-statistics/?fbclid=IwAR09Zi1T77viyyZshYNkdI0S6b4nt3Pkf8GN7KoEvgUOqwy_KoQF-Jak71o
Plaisance, P. L. (2007). Transparency: an assessment of the Kantian roots of a key element in media ethics practice. Journal of Mass Media Ethics, 22(2–3), 187–207. https://doi.org/10.1080/08900520701315855
Quinn M. J. (2015). Ethics for the information age (Sixth). Pearson.
Rini, R., & Cohen, L. S. (2022). Deepfakes, deep harms. Journal of Ethics & Social Philosophy, 22(2). https://doi.org/10.26556/jesp.v22i2.1628
Semwal, A. (2020). Deep Fakes, Artificial Intelligence & Eco Species. https://doi.org/10.31219/osf.io/u6qdf
Story, D., & Jenkins, R. (2023). Deepfake Pornography and the Ethics of Non-Veridical Representations. Philosophy & Technology, 36 (1), 56. https://doi.org/10.1007/s13347-023-00657-0
World Bank Open Data. (2023). World Bank Open Data. https://data.worldbank.org/indicator/SP.POP.TOTL
Yu, P., Xia, Z., Fei, J., & Lu, Y. (2021). A survey on deepfake video detection. IET Biometrics, 10(6), 607–624. https://doi.org/10.1049/bme2.12031
Zhang, W., & Zhao, C. (2019). Exposing Face-Swap Images Based on Deep Learning and ELA Detection. The 5th International Electronic Conference on Entropy and Its Applications. https://doi.org/10.3390/ecea-5-06684