Chapter 8

Ethical Dilemmas in AI-Driven Advertising

Serim Paker[1]

Abstract

Artificial intelligence (AI) has transformed the advertising sector, improving efficiency, personalizing, and consumer involvement. Big data analytics, programmatic advertising, and automated decision-making combined in AI-driven advertising create tailored marketing campaigns with hitherto unheard-of accuracy. But these advances raise moral issues that create issues about consumer manipulation, privacy, prejudice, and openness. The capability of artificial intelligence to employ consumer information to allow hyper-personalization raises issues about consumer autonomy and data protection laws. Also, algorithmic bias within AI-powered advertising has the potential to reinforce social injustices, thus encouraging discriminative measures. Deepfakes, chatbots, and voice assistants used during advertising are also crossing moral limits because deceptive measures are employed to manipulate consumer behavior without open consent. Emphasizing the need to ensure strong regulations and corporate responsibility, this chapter critiques the moral issues raised about artificial intelligence-powered advertising. Some of the core issues like data privacy, fairness within algorithms, and disinformation are discussed along with some probable solutions like moral AI design principles, openness regulations, and measures to ensure regulatory compliance. At the end, the chapter supports a rational strategy that capitalizes on the capability of artificial intelligence but follows moral principles to encourage customer trust and eco-friendly advertising measures.

1. Introduction

AI has changed advertising, allowing for hyper-personalization, real-time targeting, and automated decision-making. While these innovations improve efficiency and consumer interaction, they raise ethical problems. Issues such as data privacy, bias, and consumer manipulation need a thorough

1 Asst.Prof Dr., Dokuz Eylül University, Izmir Türkiye, serim.paker@deu.edu.tr, https://orcid.org/0000-0002-8931-9039

https://doi.org/10.58830/ozgur.pub710.c3025

evaluation of AI's involvement in advertising. This chapter investigates these ethical quandaries, provides real-world examples of AI misuse, and proposes a paradigm for responsible AI-driven advertising.

2. The Role of AI in Advertising

Artificial intelligence (AI) has transformed the advertising industry by providing hyper-personalized marketing strategies and real-time data analysis. AI-powered systems can process massive volumes of consumer activity data, enabling firms to develop customized adverts that match individual interests and browsing behaviors. Automation in ad placement and campaign optimization has improved efficiency, lowering costs while increasing engagement. AI also improves creative processes by creating dynamic content, forecasting trends, and tailoring communications to specific audiences. While AI provides unprecedented opportunity for advertisers, it also raises ethical questions about privacy, bias, and the manipulation of customer preferences.

2.1. AI-driven Targeting and Personalization

Artificial Intelligence (AI) is substantially transforming various sectors, particularly e-commerce and healthcare, through its ability to deliver targeted and personalized experiences based on vast datasets. In the e-commerce industry, AI-powered personalization techniques employ complex algorithms to scan consumer behavior and preferences to present highly personalized product recommendations and content. This has the advantage of enhancing customer satisfaction, engagement, and loyalty, ultimately establishing market trends within the industry (Raji et al., 2024) emphasize that AI's ability to generate personalized consumer experiences not only enhances sales but also brand loyalty through effectively meeting the individual customer needs.

AI application in **healthcare** extends the use of conventional diagnostics and therapy strategies to include personalized medicine and patient care. AI algorithms analyze genetic and demographic data to ascertain patients best positioned to benefit from specific interventions, optimizing the interventions' efficacy(Pawar et al., 2023; Weerarathna et al., 2023). Weerarathna et al. (2023) , for instance, refer to the use of AI models to predict patient responses to chemotherapy to allow personalized treatment strategies. Furthermore, Kokudeva et al. (2024) also investigate the use of AI to help determine targets and optimize the treatment protocol using machine learning, showing AI's capability to generate personalized therapeutic strategies.

Despite the amazing advantages brought about through AI in targeting and personalization, there are issues that remain, particularly in the shape of ethics issues and data privacy. As AI marketing continues to evolve further, the equilibrium between applying consumer information to create profits and consumer trust hangs in the balance. Gupta et al. (2021) are concerned about the ethics of AI marketing, citing the necessity for responsibility and openness from businesses applying AI tools. This attitude supports the need of ethical frameworks as artificial intelligence is more ingrained in many fields, not only business and marketing but also including tailored healthcare plans and drug development.

In addition, the integration of AI technologies has far-reaching implications for healthcare providers. AI's ability to provide real-time analysis using wearable devices and point-of-care tests provides healthcare providers the ability to deliver better patient outcomes along with system efficiency improvements (Yammouri & Lahcen, 2024). Such innovation is moving toward the future where real-time analysis means timely interventions further individualizing healthcare delivery. However, the technologies also raise the need to ensure robust data handling practices to safeguard patient privacy while making the best use of the data (Wasilewski et al., 2024).

In summary, overall, the application of AI to targeting and personalization is revolutionizing industries through higher customer involvement and patient care optimization. But the intersection of technology, ethics, and consumer privacy has to be balanced carefully to ensure that the full benefit of AI can be achieved while safeguarding consumer interests.

2.2. Advertising with Big Data Analytics

Particularly under the cover of programmatic advertising and big data analysis, the junction of artificial intelligence (AI) and targeting and personalizing has been much studied. Programmatic advertising depends on artificial intelligence algorithms and vast amounts of data to provide customized advertising that will help to make marketing effective and unique. AI-powered platforms scan consumer behavior, preferences, and demographic data to automate the buying and placement of the advertising in real-time to generate highly targeted marketing strategies that enhance the user experience and conversion rate. According to Holloway (2024), the use of AI and big data analysis under marketing campaigns has the potential to significantly enhance customer satisfaction through personalized offers that appeal to individual customers to generate lasting loyalty.

Big data analytics plays a critical role in the effectiveness of programmatic advertising. Data-driven insights allow marketers to craft compelling campaigns that are precisely targeted based on consumer behavior analysis. The utilization of personal data gathered from various sources, including Internet of Things (IoT) devices, social media platforms, and online transactions, enables marketers to deliver advertisements tailored to the needs and preferences of their audience (Khrais, 2020; Oh et al., 2019). By effectively combining AI's capabilities with extensive data sources, marketers can maximize their outreach and engagement while minimizing advertising wastage.

But the widespread use of personal information raises privacy-related ethics issues and challenges. As Oh et al. (2019) further clarify, brokers accumulate large amounts of personal information, balancing the need to provide personalized marketing with the need to protect consumer privacy. Overcoming these challenges involves establishing an open framework that governs the collection and use of personal information to protect consumer trust and ensure regulatory compliance. The new landscape demands that businesses employ robust data handling practices to ensure the ethical use of AI and consumer information through programmatic advertising. Ethical issues must be top priority, as evidenced through various research pieces regarding the balance between privacy and personalization (Park et al., 2023).

Moreover, AI-driven personalization extends beyond mere advertisement targeting to impact consumer behavior on a broader scale. Studies suggest that personalized promotions, such as mobile coupons, can enhance customer engagement and influence purchasing decisions positively (An et al., 2021; Huang et al., 2023). As Oh et al. Oh et al. (2019) elaborate, data brokers collect vast amounts of personal information, creating a tension between the demand for personalized marketing and the necessity to protect consumer privacy. Addressing these concerns involves establishing a transparent framework that governs the collection and usage of personal data to maintain consumer trust and compliance with regulatory standards. The evolving landscape necessitates that businesses employ robust data management practices, ensuring ethical use of AI and consumer data in programmatic advertising. Ethical considerations must be at the forefront, as underscored by various studies on the balance between personalization and privacy (Park et al., 2023).

In addition to this, AI-powered personalization breaks the limits of mere advertising targeting to influence consumer behavior on a greater

scale. Studies prove that personalized offers such as mobile coupons can promote higher customer engagement and influence purchasing behavior positively(An et al., 2021; Huang et al., 2023). The competitive advantage gained by tailoring marketing messages based on consumer profiles aligns marketing strategies with individual consumer preferences, ultimately driving higher conversion rates and more effective brand interactions (Bhuiyan, 2024; Sodiya et al., 2024).

To summarize, the confluence of artificial intelligence-driven personalization and programmatic advertising with big data analytics gives enormous opportunity for marketers to effectively improve their campaigns. Enterprises have the ability to utilize these technologies in order to provide individualized experiences while simultaneously navigating the essential problems of ethical data usage and privacy protection. This will provide a sustainable and responsible approach to marketing in the digital era.

2.3. AI-Enhanced Targeting and Personalization, Programmatic Advertising, AI-Generated Content, Chatbots, and Voice Assistants

Particularly in the areas of personalizing through targeting, programmatic advertising, AI-generated content, chatbots, and voice assistants, the integration of artificial intelligence (AI) technologies has revolutionized many industries. AI combined with big data analytics offers effective marketing solutions and improves user interactions on several digital platforms.

2.3.1. AI-driven Targeting and Personalization with Programmatic Advertising

AI-driven targeting has reshaped marketing strategies, particularly programmatic advertising, which uses AI algorithms to automate ad buying and placement in real time. This method enables businesses to analyze consumer data and behaviors, resulting in targeted advertisements that boost user engagement and conversion rates. Big data analytics improves these capabilities by facilitating the extraction of relevant consumer insights, allowing marketers to tailor their strategies more effectively based on identified preferences and purchasing patterns. However, this reliance on personal data requires strong ethical considerations, particularly concerning privacy, data security, and consumer trust (Kokudeva et al., 2024; Pawar et al., 2023; Weerarathna et al., 2023).

2.3.2. AI Content Generation and Its Consequences

AI-generated content (AIGC) has gained extensive interest based on the prospect of automating the production of content using various forms like text, imagery, and video. Research indicates that the quality of AI-generated content has a direct connection to the extent to which it will be used and accepted, especially in the learning sector where it has proven to be linked to greater learning tool satisfaction amongst learners (Holloway, 2024; Khrais, 2020). Research indicates that AI has the capability to produce new and personalized content that responds to certain user requests, further cementing the use of AI in personalized marketing strategies. The perception of AI-generated content is however complex; users are highly cautious about AI-generated content that has proven to be lower compared to human-generated content (Altay & Gilardi, 2024; Zhang & Gosline, 2023). This makes users avoid using AI tools to generate content despite the fact that AI tools are highly efficient. (Altay & Gilardi, 2024; Zhang & Gosline, 2023).

Detecting AI-generated content poses additional challenges, particularly in academic and professional writing contexts where integrity is paramount. Current studies demonstrate that while AI content detectors can identify machine-generated text with reasonable accuracy, they frequently misclassify human-generated contenas AI, raising concerns about their reliability in educational assessments and publishing (Elkhatat et al., 2023; Yadav & Rathore, 2023). This misclassification highlights the need for more nuanced detection tools capable of differentiating between human and AI-generated texts, especially in contexts involving mixed authorship (Howard (Howard et al., 2024).

2.3.3. Voice Assistants and Chatbots in Consumer Interactions

Chatbots and voice assistants are core components of AI-powered personalization. Chatbots communicate with users through textual conversations, often within the context of a service-related scenario, whereas voice assistants employ voice recognition mechanisms to create a more naturalistic user experience(Khedekar et al., 2023; Sezgin et al., 2020). These two tools have been used within various industries, including education and healthcare, where they facilitate efficient communication and automate operations (Terzopoulos & Satratzemi, 2020). Research has shown that adults and children alike are attracted to the ease of use of the AI tools, which are capable of performing functions from answering questions to managing routine operations (Terzopoulos & Satratzemi, 2020; Khedekar et al., 2023). The increased usage of the tools signifies a shift toward more

interactive and reactive digital experiences that are personalized to the individual needs of users.

In summary, overall, the convergence of programmatic advertising, AI-powered personalization, voice assistants, AIGC, and chatbots has the transformative capability to benefit both users and businesses. That being said, there are certain issues surrounding ethics, social attitudes, and content identification that need to be addressed as these technologies mature further. Navigating through the complexities will be essential to unlock the full benefits that AI has to offer to deliver higher user satisfaction and engagement.

2.4. AI in Campaign Management and Budget Optimization

Artificial intelligence (AI) is being increasingly implemented in marketing, which is causing a number of aspects of campaign management and budget optimization to undergo ongoing transformations. A significant contribution to the improvement of operational efficiency, personalization, and the overall impact of marketing strategies has been made by the synergy that exists between artificial intelligence and marketing activities.

2.4.1. AI in Campaign Management

AI technologies have demonstrated significant potential in revolutionizing campaign management by optimizing resource allocation and enhancing strategic decision-making processes. AI algorithms facilitate real-time analysis and forecasting, allowing marketers to adjust campaign parameters and allocate budgets efficiently in response to changing market conditions (Egorenkov, 2022). The integration of AI not only streamlines campaign execution but also improves the accuracy of marketing decisions, driving better engagement and enhancing customer experiences (Lyndyuk et al., 2024b). For instance, Țîrcovnicu and Hațegan (2023) discuss how AI-driven data analytics refine customer interactions, fostering a more effective marketing environment across various sectors, including retail.

The effectiveness of AI in these domains stems from its ability to process vast amounts of data and uncover insights that would be challenging to identify manually. Heins (2022) and Arbaiza et al. (2024) emphasize that AI can enhance campaign personalization by analyzing consumer behavior patterns, enabling advertisers to deliver tailored messaging that resonates with specific audience segments. This capability not only enhances user engagement but also optimizes advertising spend, leading to improved return on investment (ROI) (Ledro et al., 2022).

2.4.2. Budget Optimization through AI

AI-driven budget optimization is another pivotal aspect that contributes to the effectiveness of marketing campaigns. Businesses can utilize AI tools to simulate different budget scenarios, allowing for data-driven decisions on where to allocate resources for maximum impact (Egorenkov, 2022). The predictive capabilities of AI can help organizations forecast campaign performance based on historical data, leading to smarter financial decisions that align with strategic marketing goals (Noranee & Othman, 2023). The ability to forecast returns on marketing investments allows brands to allocate budgets dynamically, ensuring funds are utilized in the most effective areas of campaign execution.

Research shows that businesses leveraging AI for campaign management not only maintain a competitive edge but also achieve higher levels of automation and efficiency (Zancan et al., 2023). Organizations can automate routine marketing processes, freeing up resources and enabling teams to focus on strategic initiatives (Arbaiza et al., 2024). The insights garnered from AI can inform everything from media buying strategies to content creation, enhancing the precision of marketing actions and reducing wasted spend in advertising.

2.4.3. Ethical Considerations in AI-Driven Campaigns

Even if artificial intelligence brings benefits for budget control and campaign management, ethical issues have to be resolved to guarantee appropriate AI application in marketing. Using personal data for targeted advertising asks issues about customer privacy and consent, hence open data policies are necessary to develop confidence with consumers (Adebayo, 2024). Organizations have to create thorough ethical rules to control the use of artificial intelligence in marketing plans and maximize its advantages without endangering consumer privacy or confidence, as Chang and Ke (2023) emphasize.

Finally, the way artificial intelligence helps with budget control and campaign management greatly improves the capacity of marketing teams in the current environment of competitiveness. AI technologies are becoming essential tools for marketers looking for accuracy, efficiency, and ethical standards in their campaigns since they can analyze enormous datasets, forecast results, and automate procedures. To completely realize its transforming power in marketing, constant research and practice in artificial intelligence must negotiate data security and ethical consequences.

3. Ethical Dilemmas in AI-Driven Advertising

In the rapidly evolving landscape of AI-driven advertising, ethical dilemmas have emerged as a subject of considerable concern among scholars and practitioners alike. The integration of artificial intelligence in advertising methods has led to significant advantages in personalization and efficiency, but it also raises critical ethical issues, particularly surrounding consumer privacy, algorithmic bias, and transparency. Camilleri (2024) implies, in their research, that all those who are involved in the research, development and maintenance of AI systems, have social and ethical responsibilities to bear toward their consumers as well as to other stakeholders in society.

One prominent ethical issue in AI-driven advertising is the lack of transparency regarding how AI algorithms function and make decisions. Sometimes unaware that they are interacting with artificial intelligence systems, consumers wonder about their autonomy and the possibility of manipulation without informed permission. Many people may not understand the consequences of being targeted by AI-driven adverts, hence mistrust between customers and companies can result. (Kumar & Suthar, 2024). Moreover, algorithmic bias raises another alarming aspect since artificial intelligence systems can reinforce current society prejudices seen in their training data. Such prejudices can result in biased advertising methods, therefore supporting rather than questioning preconceptions. (N. Singh, 2023; Ziakis & Vlachopoulou, 2023). Brands must take a proactive approach in managing and auditing these algorithms to ensure fairness and prevent the perpetuation of harmful biases. (N. Singh, 2023).

Another critical aspect concerns consumer data privacy. The use of vast datasets allows AI algorithms to tailor advertisements to specific consumer behaviors and preferences, yet it raises pressing questions about data ownership and consent. Ethical marketing frameworks must navigate the tension between maximizing personalized consumer experiences and respecting individual privacy rights. As AI technologies scale, the implications for data protection and ethical governance become increasingly complex (Camilleri, 2023; Sharma, 2023). Business practices need to prioritize transparency and accountability, ensuring that consumers can make informed decisions about their data.

Moreover, how AI depicts women in advertising presents gender portrayal and societal norm-related moral issues. The employment of female-presenting chatbots and advertising characters to generate advertising personas presents issues about the reinforcement of gender-related stereotypes. The employment of AI has the capability to encourage diversity but must be

employed prudently to avoid the reinforcement of gender-related stereotypes within advertising strategies (Greguš & Škvareninová, 2023; Kriaučiūnaitė-Lazauskienė, 2023). The responsibility lies with the advertisers to ensure that AI tools are employed to encourage inclusivity rather than exclusivity (Kriaučiūnaitė-Lazauskienė, 2023).

Overall, AI advertising has the potential to revolutionize marketing strategies through enhanced personalization and efficiency but has complex ethical challenges. These include defending consumer privacy, addressing algorithmic bias, and ensuring gender equity in representations. Structuring AI marketing strategies around ethical principles is crucial for maintaining consumer trust and achieving sustainable advertising practices that reflect societal values and norms.

3.1. Consumer Manipulation and Persuasion

Within the field of consumer behavior, the expression "Consumer Manipulation and Persuasion" captures the tactics that marketers deploy in order to influence the decisions that consumers make regarding their purchases. There are two essential ideas that come to light under this framework: "*Exploiting Consumer Vulnerabilities*" and "*AI-Based Subconscious Persuasion Techniques*".

3.1.1. Exploiting Consumer Vulnerabilities

Marketers often capitalize on consumer vulnerabilities, which can range from emotional states to cognitive biases. Vulnerable populations, including those experiencing stress, low self-esteem, or uncertainty, may be particularly susceptible to persuasive techniques. For instance, advertising can employ emotional appeals such as fear or guilt to prompt consumers to make purchasing decisions that they are otherwise unwilling to undertake (Hibbert et al., 2007). The effectiveness of such tactics relies upon consumers' knowledge regarding persuasion tactics. If consumers are conscious that an attempt to manipulate them has been made, then they are likely to be defensive, perhaps diffusing the emotional appeal meant to be created through the advertisement (Alenazi, 2015). Successful manipulation then tends to balance the presentation of emotional appeals and the consumer defenses based upon persuasion knowledge—the set of knowledge regarding marketing tactics(Kirmani & Zhu, 2007).

Moreover, AI technologies have further changed the means through which consumer susceptibilities can be exploited. Machine learning algorithms scan consumer data to find emotional triggers and susceptibilities

to allow marketers to produce advertising that targets the emotional states and susceptibilities of specific consumers effectively(Hacker, 2021). This targeting has an ethical issue because the practice has the possibility to create an exploitative situation where consumers are directed toward making specific choices through repeated reinforcement of susceptibilities unbeknownst to them. Hence, consumer vulnerability exploitation has a two-edged sword character: it can be employed to promote sales but has to be handled using ethics to avoid manipulation.

3.1.2. AI-Based Subconscious Persuasion Techniques

AI-based subconscious persuasion techniques represent an innovative intersection of technology and psychology that facilitates subtle influence on consumer behavior. Marketers are increasingly deploying AI to create environments where consumers are subtly guided toward specific products without their conscious awareness. This approach often involves employing persuasive cues that resonate unconsciously with consumers, thereby bypassing their direct defenses (Isaac & Grayson, 2019). For example, advertisements might utilize color psychology or other subliminal techniques to provoke desired responses, influencing perceptions and purchasing behavior at a subconscious level (Lim et al., 2020).

One fascinating aspect of AI-driven persuasion is its capacity to adapt continuously based on real-time consumer behavior and interactions. Algorithms can fine-tune advertising strategies by learning from consumer reactions, optimizing the presentation of messages to elicit desired subconscious responses (Hacker, 2021). However, this raises profound ethical questions concerning informed consent and the potential for manipulation. Consumers may not be aware of how their preferences are shaped by AI, creating what some researchers term a "manipulation loop," where the technology's influence perpetuates consumer vulnerabilities without transparency (Ryu, 2024).

Furthermore, the application of persuasion knowledge becomes crucial in understanding these subconscious techniques. Consumers equipped with high levels of persuasion knowledge may become more vigilant against AI manipulations, potentially leading to a backlash against brands perceived to exploit such technologies for manipulation. Conversely, lower levels of persuasion knowledge may leave consumers more susceptible to subconscious influences, illustrating a critical area for further research and ethical debate (Kirmani & Zhu, 2007).

In conclusion, "Exploiting Consumer Vulnerabilities" and "AI-Based Subconscious Persuasion Techniques" highlight the nuanced and sometimes contentious relationship between marketing strategies and ethical consumer engagement. As AI continues to evolve, understanding and navigating these dynamics will be essential for both marketers and consumers, fostering a marketplace that prioritizes ethical transparency and consumer empowerment.

3.2. Privacy and Data Protection

In a society that is becoming more and more digital, privacy and data protection have become top priorities especially with the development of artificial intelligence (AI) and its uses in many different fields. The vast capabilities of AI-driven tracking systems, which enable large data collecting, are increasing the ethical consequences connected to consumer privacy. Furthermore, more important than ever are legislative protections against possible violations resulting from artificial intelligence technology in advertising: the General Data Protection Regulation (**GDPR**) and the California Consumer Privacy Act (**CCPA**).

3.2.1. AI-Driven Tracking Systems and the Risks of Mass Data Collection

AI-driven tracking systems have revolutionized how businesses interact with consumers by allowing unparalleled access to data on user behavior, preferences, and interactions. Such systems utilize various methods, including cookies, mobile app tracking, and social media monitoring, to collect vast amounts of personal data. This mass data collection raises significant privacy concerns, especially regarding how this data is stored, analyzed, and utilized without obtaining informed consent from consumers (Arbaiza et al., 2024; Xu et al., 2024).

The risks associated with these practices include potential breaches of data privacy, unauthorized usage of personal information, and even identity theft. When organizations gather substantial troves of data using AI, they may inadvertently expose sensitive information, making it a target for cybercriminals. As noted by Huda Huda et al. (2024), the regulatory landscape still struggles to keep pace with technological advancements, creating a gap where consumer privacy can be jeopardized and leading to systemic vulnerabilities in how personal data is safeguarded (Idoko et al., 2024). Thus, while AI facilitates better advertising and consumer engagement, it also invites ethical and legal dilemmas about the extent and manner of data collection (Eriksson, 2024).

3.2.2. GDPR, CCPA, and the Ethical Violations of AI in Advertising

The GDPR and CCPA represent critical legal frameworks designed to protect consumer privacy rights. The GDPR, implemented in the European Union, establishes stringent rules on data processing, requiring organizations to collect personal data responsibly and transparently (Reddy et al., 2020). Similarly, the CCPA provides California residents with the right to know what personal information is collected, allowing them to opt out of data sharing and enabling them to control the utilization of their data (Jin & Skiera, 2022).

Despite these regulations, ethical violations often occur in the context of AI in advertising. The potential for misalignment between consumer expectations and how organizations utilize AI for targeted advertising presents a significant challenge. AI systems may exploit loopholes in these regulations or misinterpret consent, leading to instances where consumers are unaware of how their data is being manipulated for commercial gain (Hoxhaj et al., 2023). There is a growing concern that these advertising practices can lead to ethical violations, where the consumer's autonomy and data rights are undermined, highlighting the need for stricter compliance and accountability measures among organizations deploying AI technologies (Williamson & Prybutok, 2024).

Furthermore, while health information, sensitive personal data, and biometrics are particularly vulnerable, organizations often lack robust mechanisms to safeguard this data effectively, leading to further ethical and legal challenges (Murdoch, 2021) and raising questions about the adequacy of current regulatory frameworks in addressing these complexities comprehensively (Liu et al., 2024). Continuous monitoring and adaptation of these laws are necessary to align with the rapidly advancing landscape of AI technology and its impact on consumer privacy rights.

In conclusion, the intersection of AI and data protection is fraught with challenges that necessitate a careful approach to consumer privacy. Legal frameworks such as GDPR and CCPA must evolve alongside AI advancements to ensure they effectively mitigate risks associated with data collection and enhance ethical compliance in advertising practices.

3.3. Bias and Discrimination

Bias and prejudice within artificial intelligence (AI) provide substantial ethical dilemmas with far-reaching consequences for people and society at large. Algorithmic bias, a consequence of defective machine-learning

methodologies, arises when AI systems unintentionally mirror prevailing cultural preconceptions embedded in their training data. The systematic review emphasizes the importance of ongoing research, highlighting the complex interplay between bias, technological advancements, and societal impacts. The thorough analysis emphasizes the complexities of bias in AI algorithms, highlighting the critical importance of addressing these issues in future developments(Fazil et al., 2023). This section explores two critical aspects: "Algorithmic Bias and Its Ethical Implications" and "The Dangers of Over-Personalization Limiting Consumer Options."

3.3.1. Algorithmic Bias and Its Ethical Implications

Algorithmic bias refers to the systematic and unfair discrimination that occurs when AI systems produce outcomes that are prejudiced against certain groups, often based on race, gender, or socioeconomic status. This bias can originate from various sources, including the datasets used to train AI models, which may be unrepresentative or reflect historical biases (Fazil et al., 2024; Min, 2023). For instance, predictive policing algorithms have been criticized for disproportionately targeting minority communities due to the biased historical crime data upon which they were trained (Min, 2023). The implications of this bias extend to various sectors, including hiring practices, loan approvals, and healthcare diagnoses, posing ethical concerns about fairness and equal treatment (Drage & Mackereth, 2022; Osasona et al., 2024).

The ethical ramifications of algorithmic bias are extensive. When certain demographics receive less favorable outcomes due to biased algorithms, issues of justice and equity are called into question. This undermines trust in AI technologies and raises concerns regarding accountability—if an AI system discriminates, who is responsible? Moreover, the continued implementation of these biased systems perpetuates existing inequalities and has a cascading effect on public perception of technology (Ferrara, 2023; Sreerama & Krishnamoorthy, 2022). Addressing algorithmic bias thus necessitates a multifaceted approach that includes not only technical interventions, but also ethical guidelines and regulatory frameworks aimed at ensuring equitable treatment for all groups (Fazil et al., 2024; Jobin et al., 2019).

3.3.2. The Risks of Excessive Personalization Narrowing Consumer Choices

Excessive personalization, while often touted as a means to enhance user experience, can inadvertently narrow consumer choices through

algorithmic filtering. When AI systems are designed to curate content tailored to individual user preferences, they can lead to echo chambers where consumers are exposed primarily to information and products that align with their existing beliefs and desires (Chu et al., 2022). This phenomenon can constrain the diversity of choices available to consumers, effectively limiting their exposure to novel ideas or alternatives that do not fit their predefined profiles (Aladeen, 2023).

The implications of this narrowing effect extend to areas such as advertising, content consumption, and social media interaction. Research has shown that as algorithms refine their targeting capabilities, they tend to reinforce existing consumer behaviors rather than encourage exploration and diversification (Christanto et al., 2024; Sun et al., 2020). As a result, consumers may find themselves trapped within a narrow perception of available options, which can adversely affect their decision-making processes and overall satisfaction with their experiences (Xie & Huang, 2023).

Moreover, this excessive personalization raises ethical concerns regarding autonomy and informed consent. Consumers may unknowingly surrender their agency as algorithms dictate the scope of their choices (Rosales & Fernández-Ardèvol, 2019). This is exemplified in the realm of targeted advertising, where data-driven algorithms prioritize immediate sales over delivering a broader spectrum of relevant alternatives. Ultimately, the risks associated with excessive personalization necessitate a careful evaluation of the balance between enhancing user experiences and maintaining the integrity of consumer choice (Illia et al., 2022).

In conclusion, addressing bias and discrimination in AI involves a two-pronged exploration of algorithmic bias and the risks posed by excessive personalization. Both aspects highlight the need for comprehensive ethical standards and regulatory measures to facilitate the deployment of AI technologies in a manner that promotes fairness, transparency, and consumer choice.

3.4. Autonomous Decision-Making in Advertising

Autonomous decision-making in advertising refers to the use of artificial intelligence (AI) systems that operate independently or with limited human input to create, manage, and optimize advertising campaigns. AI's ability to analyze vast amounts of data and execute complex strategies has led to its growing use in advertising practices. This discourse focuses on two primary areas: "AI Surpassing Human Decision-Making in Advertising

Strategies" and "Ethical Concerns Regarding Consumer Autonomy and Misinformation"(Lyndyuk et al., 2024a).

3.4.1. AI Surpassing Human Decision-Making in Advertising Strategies

AI technologies have the potential to surpass human decision-making capabilities primarily through their proficiency in processing large datasets at speeds and accuracies unattainable by humans. This computational superiority allows AI to analyze consumer behavior, preferences, and engagement patterns, leading to highly targeted advertising tactics. For instance, AI systems can predict market trends and optimize media spending in real-time, leading to enhanced advertising effectiveness and cost-efficiency compared to traditional methods (Kumar & Suthar, 2024; N. Singh, 2023).

As stated by Arbaiza et al. (2024) AI's ability to handle predictive analysis significantly improves campaign relevance by customizing content to individual users' needs and preferences. These advancements allow marketers to segment audiences more effectively and deploy personalized advertisements, maximizing engagement and conversion rates while continuously learning from performance data (Kumar & Suthar, 2024; N. Singh, 2023). Furthermore, AI's capacity to manage multi-channel campaigns ensures consistent messaging across platforms, an aspect that can be challenging for human-managed strategies due to the complexity involved. This shift toward AI-dominated decision-making is transforming the advertising landscape, where speed and precision may outweigh human intuition and experience.

However, there are limitations to AI's effectiveness, particularly concerning its reliance on historical data. If the training data is biased or unrepresentative, the resultant advertising strategies could reinforce existing stereotypes or create misleading narratives (Ziakis & Vlachopoulou, 2023). Thus, while AI has the potential to enhance decision-making processes, it is crucial to ensure that the data used for training is comprehensive and free from bias to avoid undermining the ethical integrity of advertising outcomes.

3.4.2. Ethical Concerns Regarding Consumer Autonomy and Misinformation

The escalation of autonomous decision-making in advertising raises numerous ethical concerns, particularly regarding consumer autonomy and the potential for misinformation. One of the primary issues is that consumers may not be fully aware of how AI-driven advertisements are

shaping their decisions. The overwhelming personalization capabilities of AI can effectively manipulate consumer choices, often steering them toward products or services that align with commercial interests rather than genuine consumer need or desire (Ziakis & Vlachopoulou, 2023). As a result, individuals might experience a diminished sense of agency, as they encounter a narrowing range of choices predominantly influenced by AI algorithms (Ziakis & Vlachopoulou, 2023).

Moreover, the utilization of misleading advertisements poses significant risks of misinformation, particularly when AI systems are programmed to prioritize clicks and engagement over factual correctness. Research indicates that inaccurate information in advertisements can lead to misguided consumer behaviors, ultimately affecting purchase intentions and undermining informed decision-making (Singh, 2023; Ziakis & Vlachopoulou, 2023). The propensity for AI-generated advertisements to propagate misinformation further complicates the landscape, necessitating robust scrutiny.

To address these ethical concerns, it is imperative to incorporate transparency and accountability into AI-driven advertising practices. Businesses must ensure that consumers are aware of how their data is being used, adopting models that prioritize ethical marketing and empower consumer autonomy (Kumar & Suthar, 2024; al., 2023). Implementing explainable AI methods can enhance consumer comprehension of AI-generated recommendations and advertisements, fostering trust and improving decision-making processes. Furthermore, practicing stringent checks on the veracity of advertisement claims can mitigate misinformation risks and promote ethical standards in advertising (Camilleri, 2023; Sharma, 2023).

In conclusion, while autonomous decision-making in advertising facilitated by AI offers remarkable advantages in efficiency and effectiveness, it also necessitates a critical examination of ethical considerations related to consumer autonomy and the dissemination of accurate information. Balancing innovation with responsibility will be vital in ensuring that advertising serves to enhance consumer experiences rather than compromise them.

4. Cases: Unethical Uses of AI in Advertising

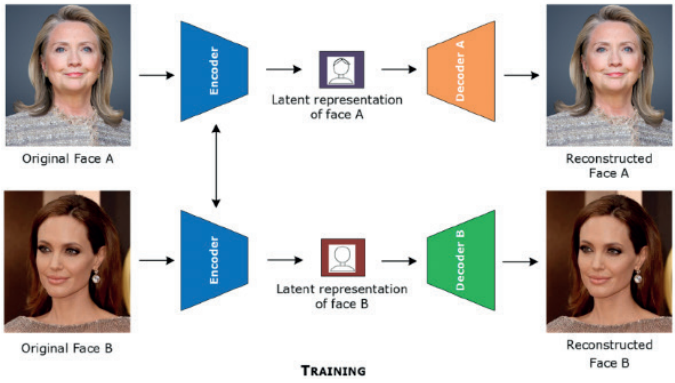
The exploration of unethical uses of artificial intelligence (AI) in advertising unveils troubling case studies that illustrate serious ethical dilemmas, privacy infringements, and manipulative practices. This analysis

primarily delves into four significant cases: the Cambridge Analytica scandal involving political microtargeting, Facebook's AI-driven behavioral advertising mechanisms, the rise of deepfake technology in advertising and the associated ethical concerns, and the problematic use of AI chatbots that engage in deceptive marketing practices.

4.1. The Cambridge Analytica case, which came to light in 2018, is emblematic of the disturbing intersection of data privacy and political advertising (Corrêa et al., 2023). The company exploited personal data acquired from millions of Facebook users without their consent to create detailed psychological profiles and execute tailored political campaigns. This microtargeting strategy raised profound ethical questions regarding user consent and data ownership, exposing vulnerabilities within the regulatory frameworks governing data privacy (Chouaki et al., 2022).

The unethical manipulation of such data facilitated the dissemination of targeted misinformation and played a significant role in shaping the political landscape during elections (Ali et al., 2019). Cambridge Analytica's practices prompted increasing scrutiny and calls for reform in political advertising, leading to legislative measures intended to protect users from similar exploitative strategies in the future (Eriksson, 2024).

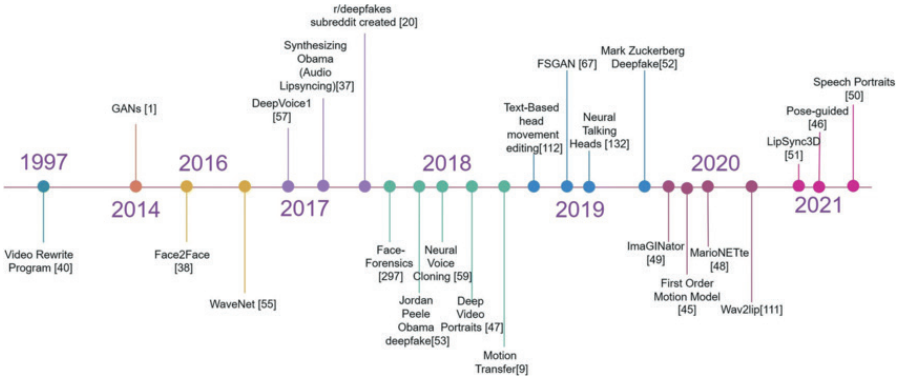
4.2. Facebook's AI-driven behavioral advertising mechanisms further complicate the ethical landscape of digital marketing. The platform's algorithms optimize advertisement delivery based on user engagement and preferences inferred from vast quantities of personal data. However, these practices often lack transparency, leading to issues such as discrimination and manipulation of user sentiment (Andreou et al., 2019). Research suggests that while Facebook aims to connect advertisers with relevant users, this often leads to echo chambers that reinforce existing beliefs and biases, fostering political polarization (Cotter (Cotter et al., 2021)et al., 2021). The opaque nature of ad targeting erodes trust among users and raises social responsibility concerns regarding how advertisers can exploit algorithmically derived data to shape perceptions and behavior without user awareness (Ali et al., 2019).



4.3. The advent of deepfake technology has introduced another layer of ethical complexity in advertising. Deepfakes, which employ AI to create hyper-realistic yet fictitious representations of individuals, present significant risks in terms of misinformation and deceptive advertising practices (Pizzi

et al., 2023). This technology raises ethical concerns about authenticity and consumer trust as advertisers might use deepfakes to present misleading narratives or endorsements from individuals without their consent (Wiese et al., 2020). The potential for deepfakes to fabricate celebrity endorsements or mislead consumers about product efficacy poses risks not just to individuals but also undermines the integrity of brands and the advertising industry as a whole (Pizzi et al., 2021). The deceptive nature of such representations necessitates strict regulations to address the ramifications of false advertising and protect consumers from manipulative practices (Kish, 2020). The earliest example of manipulated multimedia content oc-curred in 1860 when a portrait of southern politician JohnCalhoun was skillfully manipulated by replacing his head with that of US President for propaganda purposes and evolved rapidly until present(Masood et al., 2022). The timeline of key developments can be seen at Figure1.

Figure1. Timeline of Key Developments.



4.4. AI chatbots, which have become increasingly prevalent in marketing, also present ethical dilemmas through manipulative practices. These chatbots, often programmed to engage users and facilitate transactions, may employ strategies to influence consumer behavior without disclosing their artificial nature. Studies indicate that chatbots can foster relationships with consumers that blur the lines between human interaction and AI engagement, often to the latter's advantage (Arbaiza et al., 2024). For example, the anthropomorphism of chatbots—giving them human-like traits—can lead consumers to lower their defenses, making them more susceptible to marketing tactics that might otherwise be viewed skeptically (Pizzi et al., 2023). This degree of manipulation necessitates a balanced

approach that embraces technological advancement while upholding ethical standards in consumer interactions.

In conclusion, the unethical uses of AI in advertising highlight significant challenges regarding privacy, transparency, and consumer protection. Each case study demonstrates the necessity for frameworks that ensure ethical practices in the use of AI technologies in marketing. The convergence of technological innovation and ethical responsibility forms the basis for re-evaluating advertising strategies, emphasizing the need for regulatory oversight that protects consumers and fosters trust in digital marketing landscapes. These illuminating case studies reflect critical issues that demand scholarly attention and policy intervention to safeguard public interests in the evolving world of AI-powered advertising.

5. Ethical AI Advertising Framework: Principles and Recommendations

The following are some of the recommendations that could be put into consideration.

5.1. Transparency & Explainability

As advertising increasingly incorporates AI-driven techniques, transparency becomes paramount. Consumers should be empowered to understand how algorithms influence the ads they encounter. Explainability relates to the ability to uncover how decisions are made in AI systems, allowing stakeholders to grasp the inner workings of these models (Cary et al., 2024). Research emphasizes the importance of clear communications from companies regarding the algorithms they employ, including the data inputs that drive ad placements (Sreerama & Krishnamoorthy, 2022). Practitioners must aim for transparency not merely as a compliance measure but as a fundamental principle of ethical practice in AI advertising (Mehrabi et al., 2019). By promoting informed consumer consent, organizations can foster trust and accountability within the advertising ecosystem (Fletcher et al., 2021).

5.2. Fairness (Equity) & Bias Mitigation

Maintaining fairness is not only a basic need of ethical artificial intelligence in marketing but also an optional extra feature. The algorithms themselves and the data used for training are among the several sources of bias that might mirror society prejudices (Bellamy et al., 2019; Ferrara, 2023). Methods such as fairness metrics enable one to evaluate the equity

of AI advertising systems by means of which one can spot and minimize disparities (Albaroudi et al., 2024). Attaching fair results requires effective strategies including data preprocessing, algorithmic transparency, and varied representation (Sreerama & Krishnamoorthy, 2022). To address the complexity of bias in artificial intelligence systems (Bellamy et al., 2019), an interdisciplinary approach comprising cooperation among technologists, advertisers, and social scientists is absolutely essential.

Data Privacy and Consumer Control

Using artificial intelligence in advertising magnifies consumer data privacy issues and calls for strict data protection policies. Consumers have to keep control over their personal data and make wise decisions on the usage of it (Zhao, 2024). Regulatory frameworks should mandate organizations to implement robust data governance practices that respect consumer preferences, minimizing risks related to data misuse (Cheong et al., 2023; Tillu et al., 2023b). By means of data for advertising personalization, the integration of technologies like anonymization and encryption helps to strengthen privacy measures so ensuring ethical standards are maintained(Tillu et al., 2023a). Maintaining consumer autonomy will not only help to increase the legitimacy of advertising markets but also encourage adherence to legal rules about data privacy (Padmanaban, 2024).

5.3. Regulatory Compliance and Corporate Liability

Organizations have to keep ethical standards going beyond simple compliance while matching their AI advertising practices with current legal systems. Companies should aggressively modify their strategies to fit regulatory needs and build a culture of corporate responsibility as the terrain of AI control is fast changing (Chin et al., 2023; Tillu et al., 2023b). This covers following accepted ideas of justice and responsibility as well as creating an environment that gives ethical issues top priority for the application of artificial intelligence technologies(Padmanaban, 2024). Companies can reduce the risks related to algorithmic bias and help to build public confidence in AI systems by actively participating in compliance and proving social responsibility (Albaroudi et al., 2024; Mullankandy, 2024).

5.4. Ethical AI Design in Advertising Algorithms

The design of AI algorithms must prioritize ethical considerations from inception through to deployment. This involves incorporating fairness metrics and bias mitigation strategies within the algorithmic design process (C. Singh, 2023). A commitment to ethical AI design encourages the

development of algorithms that reflect equitable values and serve diverse audiences without perpetuating discriminatory practices (Adeyelu et al., 2024). Additionally, the ongoing assessment and improvement of these systems are essential to adapt to societal changes and emerging ethical standards (Xu et al., 2022). By embedding ethical principles into the core framework of AI advertising technologies, organizations can enhance their competitiveness while contributing positively to the societal impact of advertising practices (Mehrabi et al., 2019).

6. Final Thoughts and Suggestions for the Future

Through improvements in personalization, automation, and data-driven decision-making, advertising that is powered by artificial intelligence has significantly altered the state of the marketing landscape. But the rapid pace of its development has given rise to ethical concerns regarding the privacy of consumers, the bias of algorithms, the dissemination of false information, and transparency. To address these challenges, a balanced approach is required, one that makes use of the potential of artificial intelligence while also placing an emphasis on ethical standards and consumer trust.

Regulatory frameworks need to undergo evolution in order to provide more transparent guidelines for the responsible application of artificial intelligence in advertising. The incorporation of proactive bias mitigation strategies, stronger data protection mechanisms, and transparency in decision-making processes driven by artificial intelligence should be established as part of marketing practices. To ensure that the deployment of artificial intelligence is conducted in an ethical manner, it is necessary for policymakers, developers of AI, and marketers to work together across disciplines.

The long-term societal impact of artificial intelligence in advertising should be investigated in future research, with a particular focus on the impact it has on the autonomy and decision-making of consumers. In order to shape an advertising ecosystem that is both sustainable and responsible, it will be essential to develop artificial intelligence systems that are in accordance with ethical principles while maintaining efficiency.

References

Adebayo, A. A. (2024). Campaigning in the Age of AI: Ethical Dilemmas and Practical Solutions for the UK and US. *International Journal of Social Science and Human Research*, *07*(12). https://doi.org/10.47191/ijsshr/v7-i12-65

Adeyelu, O. O., Ugochukwu, C. E., & Shonibare, M. A. (2024). Automating Financial Regulatory Compliance With Ai: A Review and Application Scenarios. *Finance & Accounting Research Journal*, *6*(4), 580-601. https://doi.org/10.51594/farj.v6i4.1035

Aladeen, H. (2023). Investigating the Impact of Bias in Web Search Algorithms: Implications for Digital Inequality. https://doi.org/10.31219/osf.io/dmkar

Albaroudi, E., Mansouri, T., & Alameer, A. (2024). A Comprehensive Review of AI Techniques for Addressing Algorithmic Bias in Job Hiring. *Ai*, *5*(1), 383-404. https://doi.org/10.3390/ai5010019

Alenazi, S. A. (2015). The Effects of Statement Persuasiveness, Statement Strength, and Regulatory Focus on Manipulative Intent Inference. *Journal of Business & Economics Research (Jber)*, *13*(1), 43. https://doi.org/10.19030/jber.v13i1.9078

Ali, M., Sapie□y□ski, P., Korolova, A., Mislove, A., & Rieke, A. (2019). Ad Delivery Algorithms: The Hidden Arbiters of Political Messaging. https://doi.org/10.48550/arxiv.1912.04255

Altay, S., & Gilardi, F. (2024). People Are Skeptical of Headlines Labeled as AI-generated, Even if True or Human-Made, Because They Assume Full AI Automation. *Pnas Nexus*, *3*(10). https://doi.org/10.1093/pnasnexus/pgae403

An, Y., Chen, Y., & Li, S. (2021). Intention to Redeem M-Coupons and Intention to Disclose Personal Information: Based on Internet Using Motivation and M-Coupons Delivery Approach. 39-44. https://doi.org/10.1145/3507485.3507492

Andreou, A., Silva, M., Benevenuto, F. c., Goga, O., Loiseau, P., & Mislove, A. (2019). Measuring the Facebook Advertising Ecosystem. https://doi.org/10.14722/ndss.2019.23280

Arbaiza, F., Arias, J., & Robledo-Dioses, K. (2024). AI-Driven Advertising Activity: Perspectives From Peruvian Advertisers. *Communication & Society*, 273-292. https://doi.org/10.15581/003.37.4.273-292

Bellamy, R., Dey, K., Hind, M., Hoffman, S. C., Houde, S., Kannan, K., Lohia, P., Martino, J., Mehta, S., Mojsilović, A., Nagar, S., Ramamurthy, K. N., Richards, J. T., Saha, D., Sattigeri, P., Singh, M., Varshney, K. R., & Zhang, Y. (2019). AI Fairness 360: An Extensible Toolkit for Detecting

and Mitigating Algorithmic Bias. *Ibm Journal of Research and Development*, *63*(4/5), 4:1-4:15. https://doi.org/10.1147/jrd.2019.2942287

Bhuiyan, M. S. (2024). The Role of AI-Enhanced Personalization in Customer Experiences. *Journal of Computer Science and Technology Studies*, *6*(1), 162-169. https://doi.org/10.32996/jcsts.2024.6.1.17

Camilleri, M. A. (2023). Artificial Intelligence Governance: Ethical Considerations and Implications for Social Responsibility. *Expert Systems*, *41*(7). https://doi.org/10.1111/exsy.13406

Camilleri, M. A. (2024). Artificial intelligence governance: Ethical considerations and implications for social responsibility. *Expert Systems*, *41*(7), e13406.

Cary, M. P., Bessias, S., McCall, J., Pencina, M., Grady, S. D., Lytle, K. S., & Economou-Zavlanos, N. (2024). Empowering Nurses to Champion Health Equity &Amp; BE FAIR: Bias Elimination for Fair and Responsible AI in Healthcare. *Journal of Nursing Scholarship*, *57*(1), 130-139. https://doi.org/10.1111/jnu.13007

Chang, Y.-L., & Ke, J. (2023). Socially Responsible Artificial Intelligence Empowered People Analytics: A Novel Framework Towards Sustainability. *Human Resource Development Review*, *23*(1), 88-120. https://doi.org/10.1177/15344843231200930

Cheong, J., Kuzucu, S., Kalkan, S., & Güneş, H. (2023). Towards Gender Fairness for Mental Health Prediction. 5932-5940. https://doi.org/10.24963/ijcai.2023/658

Chin, M. H., Afsarmanesh, N., Bierman, A. S., Chang, C., Colón-Rodríguez, C. J., Dullabh, P., Duran, D. G., Fair, M., Hernandez-Boussard, T., Hightower, M., Jain, A., Jordan, W. B., Konya, S., Moore, R. H., Moore, T. T., Rodriguez, R., Shaheen, G., Snyder, L. P., Srinivasan, M.,…Ohno-Machado, L. (2023). Guiding Principles to Address the Impact of Algorithm Bias on Racial and Ethnic Disparities in Health and Health Care. *Jama Network Open*, *6*(12), e2345050. https://doi.org/10.1001/jamanetworkopen.2023.45050

Chouaki, S., Bouzenia, I., Goga, O., & Roussillon, B. (2022). Exploring the Online Micro-Targeting Practices of Small, Medium, and Large Businesses. https://doi.org/10.48550/arxiv.2207.09286

Christanto, H. J., Dewi, C., Sutresno, S. A., & Silalahi, A. D. K. (2024). Analyzing the Use of Chat Generative Pre-Trained Transformer and Artificial Intelligence. *Revue D Intelligence Artificielle*, *38*(4), 1297-1304. https://doi.org/10.18280/ria.380423

Chu, C. H., Leslie, K., Shi, J., Nyrup, R., Bianchi, A., Khan, S. S., Rahimi, S. A., Lyn, A., & Grenier, A. (2022). Ageism and Artificial Intelligence:

Protocol for a Scoping Review. *Jmir Research Protocols*, *11*(6), e33211. https://doi.org/10.2196/33211

Corrêa, N. K., Galvão, C., Santos, J. W., Pino, C. D., Pinto, E. P., Barbosa, C., Massmann, D., Mambrini, R., Galvão, L., Terem, E., & Oliveira, N. d. (2023). Worldwide AI Ethics: A Review of 200 Guidelines and Recommendations for AI Governance. *Patterns*, *4*(10), 100857. https://doi.org/10.1016/j.patter.2023.100857

Cotter, K., Medeiros, M., Pak, C., & Thorson, K. (2021). "Reach the Right People": The Politics of "Interests" in Facebook's Classification System for Ad Targeting. *Big Data & Society*, *8*(1). https://doi.org/10.1177/2053951721996046

Drage, E., & Mackereth, K. (2022). Does AI Debias Recruitment? Race, Gender, and AI's "Eradication of Difference". *Philosophy & Technology*, *35*(4). https://doi.org/10.1007/s13347-022-00543-1

Egorenkov, D. (2022). AI-Powered Marketing Automation: Revolutionizing Campaign Management. *International Journal for Multidisciplinary Research*, *4*(2). https://doi.org/10.36948/ijfmr.2022.v04i02.23358

Elkhatat, A. M., Elsaid, K., & Al-Meer, S. (2023). Evaluating the Efficacy of AI Content Detection Tools in Differentiating Between Human and AI-generated Text. *International Journal for Educational Integrity*, *19*(1). https://doi.org/10.1007/s40979-023-00140-5

Eriksson, A. (2024). AI-Driven Advertising: Ethical Challenges, Frameworks, and Future Directions. https://doi.org/10.31219/osf.io/s8wbc

Fazil, A. W., Hakimi, M., & Shahidzay, A. K. (2023). A comprehensive review of bias in AI algorithms. *Nusantara Hasana Journal*, *3*(8), 1-11.

Fazil, A. W., Hakimi, M., & Shahidzay, A. K. (2024). A Comprehensive Review of Bias in Ai Algorithms. *Nusantara Hasana Journal*, *3*(8), 1-11. https://doi.org/10.59003/nhj.v3i8.1052

Ferrara, E. (2023). Fairness and Bias in Artificial Intelligence: A Brief Survey of Sources, Impacts, and Mitigation Strategies (Preprint). https://doi.org/10.2196/preprints.48399

Fletcher, R., Nakeshimana, A., & Olubeko, O. (2021). Addressing Fairness, Bias, and Appropriate Use of Artificial Intelligence and Machine Learning in Global Health. *Frontiers in Artificial Intelligence*, *3*. https://doi.org/10.3389/frai.2020.561802

Greguš, Ľ., & Škvareninová, S. (2023). Opinion Balance of News in the Time of Mistrust in Media and Democratic Institutions. 133-142. https://doi.org/10.34135/mmidentity-2023-13

Gupta, R., Srivastava, D., Sahu, M., Tiwari, S., Ambasta, R. K., & Kumar, P. (2021). Artificial Intelligence to Deep Learning: Machine Intelligence

Approach for Drug Discovery. *Molecular Diversity*, *25*(3), 1315-1360. https://doi.org/10.1007/s11030-021-10217-3

Hacker, P. (2021). Manipulation by Algorithms. Exploring the Triangle of Unfair Commercial Practice, Data Protection, and Privacy Law. *European Law Journal*, *29*(1-2), 142-175. https://doi.org/10.1111/eulj.12389

Heins, C. (2022). Artificial Intelligence in Retail – A Systematic Literature Review. *Foresight*, *25*(2), 264-286. https://doi.org/10.1108/fs-10-2021-0210

Hibbert, S., Smith, A., Davies, A., & Ireland, F. (2007). Guilt Appeals: Persuasion Knowledge and Charitable Giving. *Psychology and Marketing*, *24*(8), 723-742. https://doi.org/10.1002/mar.20181

Holloway, S. (2024). Exploring the Role of Digital Technologies in Enhancing Supply Chain Efficiency and Marketing Effectiveness. https://doi.org/10.20944/preprints202406.1538.v1

Howard, F. M., Li, A., Riffon, M., Garrett-Mayer, E., & Pearson, A. T. (2024). Characterizing the Increase in Artificial Intelligence Content Detection in Oncology Scientific Abstracts From 2021 to 2023. *Jco Clinical Cancer Informatics*(8). https://doi.org/10.1200/cci.24.00077

Hoxhaj, O., Halilaj, B., & Harizi, A. (2023). Ethical Implications and Human Rights Violations in the Age of Artificial Intelligence. *Balkan Social Science Review*, *22*(22), 153-171. https://doi.org/10.46763/bssr232222153h

Huang, Z., Chen, G., & Zhao, G. (2023). The Effect of Personalization on Consumer Behaviors. 389-405. https://doi.org/10.2991/978-94-6463-246-0_47

Huda, M., Awaludin, A., & Siregar, H. K. (2024). Legal Challenges in Regulating Artificial Intelligence: A Comparative Study of Privacy and Data Protection Laws. *Ijsh*, *1*(2), 116-125. https://doi.org/10.59613/g8dc9v94

Idoko, I. P., Igbede, M. A., Manuel, H. N. N., Adeoye, T. O., Akpa, F. A., & Ukaegbu, C. (2024). Big Data and AI in Employment: The Dual Challenge of Workforce Replacement and Protecting Customer Privacy in Biometric Data Usage. *Global Journal of Engineering and Technology Advances*, *19*(2), 089-106. https://doi.org/10.30574/gjeta.2024.19.2.0080

Illia, L., Colleoni, E., & Zyglidopoulos, S. C. (2022). Ethical Implications of Text Generation in the Age of Artificial Intelligence. *Business Ethics the Environment & Responsibility*, *32*(1), 201-210. https://doi.org/10.1111/beer.12479

Isaac, M. S., & Grayson, K. (2019). Priming Skepticism: Unintended Consequences of One-sided Persuasion Knowledge Access. *Psychology and Marketing*, *37*(3), 466-478. https://doi.org/10.1002/mar.21313

Jin, Y., & Skiera, B. (2022). How Do Privacy Laws Impact the Value for Advertisers, Publishers and Users in the Online Advertising Market? A Compa-

rison of the EU, US and China. *Journal of Creating Value*, *8*(2), 306-327. https://doi.org/10.1177/23949643221117676

Jobin, A., Ienca, M., & Vayena, E. (2019). The Global Landscape of AI Ethics Guidelines. *Nature Machine Intelligence*, *1*(9), 389-399. https://doi.org/10.1038/s42256-019-0088-2

Khedekar, B., Shinde, S., Bagave, S., & Belvalkar, H. (2023). Beacon: The Desktop Voice Assistant. *International Research Journal of Modernization in Engineering Technology and Science*. https://doi.org/10.56726/irjmets35889

Khrais, L. T. (2020). Role of Artificial Intelligence in Shaping Consumer Demand in E-Commerce. *Future Internet*, *12*(12), 226. https://doi.org/10.3390/fi12120226

Kirmani, A., & Zhu, R. (2007). Vigilant Against Manipulation: The Effect of Regulatory Focus on the Use of Persuasion Knowledge. *Journal of Marketing Research*, *44*(4), 688-701. https://doi.org/10.1509/jmkr.44.4.688

Kish, K. (2020). Paying Attention: Big Data and Social Advertising as Barriers to Ecological Change. *Sustainability*, *12*(24), 10589. https://doi.org/10.3390/su122410589

Kokudeva, M., Vichev, M., Naseva, E., Miteva, D. G., & Velikova, T. (2024). Artificial Intelligence as a Tool in Drug Discovery and Development. *World Journal of Experimental Medicine*, *14*(3). https://doi.org/10.5493/wjem.v14.i3.96042

Kriaučiūnaitė-Lazauskienė, G. (2023). Grounded Theory in AI-enhanced Women's Image in Advertising. 228-240. https://doi.org/10.34135/mmidentity-2023-23

Kumar, D., & Suthar, N. (2024). Ethical and Legal Challenges of AI in Marketing: An Exploration of Solutions. *Journal of Information Communication and Ethics in Society*, *22*(1), 124-144. https://doi.org/10.1108/jices-05-2023-0068

Ledro, C., Nosella, A., & Vinelli, A. (2022). Artificial Intelligence in Customer Relationship Management: Literature Review and Future Research Directions. *Journal of Business and Industrial Marketing*, *37*(13), 48-63. https://doi.org/10.1108/jbim-07-2021-0332

Lim, D., Baek, T. H., Yoon, S., & Kim, Y. (2020). Colour Effects in Green Advertising. *International Journal of Consumer Studies*, *44*(6), 552-562. https://doi.org/10.1111/ijcs.12589

Liu, Z., Iqbal, U., & Saxena, N. (2024). Opted Out, Yet Tracked: Are Regulations Enough to Protect Your Privacy? *Proceedings on Privacy Enhancing Technologies*, *2024*(1), 280-299. https://doi.org/10.56553/popets-2024-0016

Lyndyuk, A., Havrylyuk, I., Tomashevskii, Y., Khirivskyi, R., & Kohut, M. (2024a). The impact of artificial intelligence on marketing communica-

tions: New business opportunities and challenges. *Economics of Development*, *4*(23), 60-71.

Lyndyuk, A., Havrylyuk, I., Tomashevskii, Y., Khirivskyi, R., & Kohut, M. (2024b). The Impact of Artificial Intelligence on Marketing Communications: New Business Opportunities and Challenges. *Economics of Development*, *23*(4), 60-71. https://doi.org/10.57111/econ/4.2024.60

Masood, M., Nawaz, M., Malik, K., Javed, A., Irtaza, A., & Malik, H. (2022). Deepfakes generation and detection: state-of-the-art, open challenges, countermeasures, and way forward. *Applied Intelligence*, *53*, 1-53. https://doi.org/10.1007/s10489-022-03766-z

Mehrabi, N., Morstatter, F., Saxena, N. A., Lerman, K., & Galstyan, A. (2019). A Survey on Bias and Fairness in Machine Learning. https://doi.org/10.48550/arxiv.1908.09635

Min, A. (2023). Artifical Intelligence and Bias: Challenges, Implications, and Remedies. *Journal of Social Research*, *2*(11), 3808-3817. https://doi.org/10.55324/josr.v2i11.1477

Mullankandy, S. (2024). Transforming Data Into Compliance: Harnessing AI/ML to Enhance Regulatory Reporting Processes. *Jaigs*, *3*(1), 62-73. https://doi.org/10.60087/jaigs.v3i1.66

Murdoch, B. (2021). Privacy and Artificial Intelligence: Challenges for Protecting Health Information in a New Era. *BMC Medical Ethics*, *22*(1). https://doi.org/10.1186/s12910-021-00687-3

Noranee, S., & Othman, A. K. (2023). Understanding Consumer Sentiments: Exploring the Role of Artificial Intelligence in Marketing. *Jmm17 Jurnal Ilmu Ekonomi Dan Manajemen*, *10*(1), 15-23. https://doi.org/10.30996/jmm17.v10i1.8690

Oh, H., Park, S., Lee, G. M., Heo, H., & Choi, J. K. (2019). Personal Data Trading Scheme for Data Brokers in IoT Data Marketplaces. *Ieee Access*, *7*, 40120-40132. https://doi.org/10.1109/access.2019.2904248

Osasona, F., Amoo, O. O., Atadoga, A., Abrahams, T. O., Farayola, O. A., & Ayinla, B. S. (2024). Reviewing the Ethical Implications of Ai in Decision Making Processes. *International Journal of Management & Entrepreneurship Research*, *6*(2), 322-335. https://doi.org/10.51594/ijmer.v6i2.773

Padmanaban, H. (2024). Revolutionizing Regulatory Reporting Through AI/ML: Approaches for Enhanced Compliance and Efficiency. *Jaigs*, *2*(1), 71-90. https://doi.org/10.60087/jaigs.v2i1.98

Park, H., Oh, H., & Choi, J. K. (2023). A Profit Maximization Model for Data Consumers With Data Providers' Incentives in Personal Data Trading Market. *Data*, *9*(1), 6. https://doi.org/10.3390/data9010006

Pawar, V., Patil, A., Tamboli, F. A., Gaikwad, D., Mali, D., & Shinde, A. J. (2023). Harnessing the Power of AI in Pharmacokinetics and Pharmacodynamics: A Comprehensive Review. *International Journal of Pharmaceutical Quality Assurance*, *14*(02), 426-439. https://doi.org/10.25258/ijpqa.14.2.31

Pizzi, G., Scarpi, D., & Pantano, E. (2021). Artificial Intelligence and the New Forms of Interaction: Who Has the Control When Interacting With a Chatbot? *Journal of Business Research*, *129*, 878-890. https://doi.org/10.1016/j.jbusres.2020.11.006

Pizzi, G., Vannucci, V., Mazzoli, V., & Donvito, R. (2023). I, Chatbot! The Impact of Anthropomorphism and Gaze Direction on Willingness to Disclose Personal Information and Behavioral Intentions. *Psychology and Marketing*, *40*(7), 1372-1387. https://doi.org/10.1002/mar.21813

Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). E-Commerce and Consumer Behavior: A Review of AI-powered Personalization and Market Trends. *GSC Advanced Research and Reviews*, *18*(3), 066-077. https://doi.org/10.30574/gscarr.2024.18.3.0090

Reddy, S. V., Reddy, B., Dodda, S., Raparthi, M., & Maruthi, S. (2020). Ethical Considerations in AI-Enabled Big Data Research: Balancing Innovation and Privacy. https://doi.org/10.52783/ijca.v13i03.38350

Rosales, A., & Fernández-Ardèvol, M. (2019). Structural Ageism in Big Data Approaches. *Nordicom Review*, *40*(s1), 51-64. https://doi.org/10.2478/nor-2019-0013

Ryu, S. (2024). Brand Communications During a Global Crisis: Understanding Persuasion Intent, Perceived Brand Opportunism and Message Sincerity. *Journal of Product & Brand Management*, *33*(1), 162-178. https://doi.org/10.1108/jpbm-11-2022-4230

Sezgin, E., Huang, Y., Ramtekkar, U., & Lin, S. (2020). Readiness for Voice Assistants to Support Healthcare Delivery During a Health Crisis and Pandemic. *NPJ Digital Medicine*, *3*(1). https://doi.org/10.1038/s41746-020-00332-0

Sharma, S. (2023). Ethical Considerations in AI-Based Marketing: Balancing Profit and Consumer Trust. *TJJPT*, *44*(3), 1301-1309. https://doi.org/10.52783/tjjpt.v44.i3.474

Singh, C. (2023). Artificial Intelligence and Deep Learning: Considerations for Financial Institutions for Compliance With the Regulatory Burden in the United Kingdom. *Journal of Financial Crime*, *31*(2), 259-266. https://doi.org/10.1108/jfc-01-2023-0011

Singh, N. (2023). AI-Driven Personalization in eCommerce Advertising. *International Journal for Research in Applied Science and Engineering Technology*, *11*(12), 1692-1698. https://doi.org/10.22214/ijraset.2023.57695

Sodiya, E. O., Amoo, O. O., Umoga, U. J., & Atadoga, A. (2024). AI-driven Personalization in Web Content Delivery: A Comparative Study of User Engagement in the USA and the UK. *World Journal of Advanced Research and Reviews*, *21*(2), 887-902. https://doi.org/10.30574/wjarr.2024.21.2.0502

Sreerama, J., & Krishnamoorthy, G. (2022). Ethical Considerations in AI Addressing Bias and Fairness in Machine Learning Models. *Journal of Knowledge Learning and Science Technology Issn 2959-6386 (Online)*, *1*(1), 130-138. https://doi.org/10.60087/jklst.vol1.n1.p138

Sun, W., Nasraoui, O., & Shafto, P. (2020). Evolution and Impact of Bias in Human and Machine Learning Algorithm Interaction. *Plos One*, *15*(8), e0235502. https://doi.org/10.1371/journal.pone.0235502

Terzopoulos, G., & Satratzemi, M. (2020). Voice Assistants and Smart Speakers in Everyday Life and in Education. *Informatics in Education*, 473-490. https://doi.org/10.15388/infedu.2020.21

Tillu, R., Muthusubramanian, M., & Periyasamy, V. (2023a). From Data to Compliance: The Role of AI/ML in Optimizing Regulatory Reporting Processes. *Journal of Knowledge Learning and Science Technology Issn 2959-6386 (Online)*, *2*(3), 381-391. https://doi.org/10.60087/jklst.vol2.n3.p391

Tillu, R., Muthusubramanian, M., & Periyasamy, V. (2023b). Transforming Regulatory Reporting With AI/ML: Strategies for Compliance and Efficiency. *Journal of Knowledge Learning and Science Technology Issn 2959-6386 (Online)*, *2*(1), 145-157. https://doi.org/10.60087/jklst.vol2.n1.p157

Țîrcovnicu, G.-I., & Haţegan, C.-D. (2023). Integration of Artificial Intelligence in the Risk Management Process: An Analysis of Opportunities and Challenges. *Journal of Financial Studies*, *8*(15), 198-214. https://doi.org/10.55654/jfs.2023.8.15.13

Wasilewski, T., Kamysz, W., & Gębicki, J. (2024). AI-Assisted Detection of Biomarkers by Sensors and Biosensors for Early Diagnosis and Monitoring. *Biosensors*, *14*(7), 356. https://doi.org/10.3390/bios14070356

Weerarathna, I. N., Kamble, A. R., & Luharia, A. (2023). Artificial Intelligence Applications for Biomedical Cancer Research: A Review. *Cureus*. https://doi.org/10.7759/cureus.48307

Wiese, M., Martínez-Climent, C., & Botella-Carrubi, D. (2020). A Framework for Facebook Advertising Effectiveness: A Behavioral Perspective. *Journal of Business Research*, *109*, 76-87. https://doi.org/10.1016/j.jbusres.2019.11.041

Williamson, S., & Prybutok, V. R. (2024). Balancing Privacy and Progress: A Review of Privacy Challenges, Systemic Oversight, and Patient Percep-

tions in AI-Driven Healthcare. *Applied Sciences*, *14*(2), 675. https://doi.org/10.3390/app14020675

Xie, Y., & Huang, Y. (2023). A Novel Personalized Recommendation Model for Computing Advertising Based on User Acceptance Evaluation. *Ieee Access*, *11*, 140636-140645. https://doi.org/10.1109/access.2023.3339839

Xu, J., Xiao, Y., Wang, H., Ning, Y., Shenkman, E., Bian, J., & Wang, F. (2022). Algorithmic Fairness in Computational Medicine. https://doi.org/10.1101/2022.01.16.21267299

Xu, Y., Liu, Y., Wu, J., & Zhan, X. (2024). Privacy by Design in Machine Learning Data Collection: An Experiment on Enhancing User Experience. *Applied and Computational Engineering*, *97*(1), 64-68. https://doi.org/10.54254/2755-2721/97/20241388

Yadav, K., & Rathore, P. (2023). AI-Generated Content Detectors: Boon or Bane for Scientific Writing. *Indian Journal of Science and Technology*, *16*(39), 3435-3439. https://doi.org/10.17485/ijst/v16i39.1632

Yammouri, G., & Lahcen, A. A. (2024). AI-Reinforced Wearable Sensors and Intelligent Point-of-Care Tests. *Journal of Personalized Medicine*, *14*(11), 1088. https://doi.org/10.3390/jpm14111088

Zancan, C., Passador, J. L., & Passador, C. S. (2023). Integrating Python-Based Artificial Intelligence for Enhanced Management of Inter-Municipal Tourism Consortia: A Technological Approach. *Caderno Virtual De Turismo*, *23*(3), 83. https://doi.org/10.18472/cvt.23n3.2023.2103

Zhang, Y., & Gosline, R. (2023). Human Favoritism, Not AI Aversion: People's Perceptions (And Bias) Toward Generative AI, Human Experts, and Human–GAI Collaboration in Persuasive Content Generation. *Judgment and Decision Making*, *18*. https://doi.org/10.1017/jdm.2023.37

Zhao, H. (2024). Fair and Optimal Prediction via Post-processing. *Ai Magazine*, *45*(3), 411-418. https://doi.org/10.1002/aaai.12191

Ziakis, C., & Vlachopoulou, M. (2023). Artificial Intelligence in Digital Marketing: Insights From a Comprehensive Review. *Information*, *14*(12), 664. https://doi.org/10.3390/info14120664