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The Use of Artificial Intelligence in the Information Space: a Philosophical Perspective

Tetiana HUMENIUK
Doctor of Philosophy, Professor
Kyiv National University
of Culture and Arts
36, Ye. Konovaltsia St.,
01133, Ukraine
t_gumenyuk@ukr.net
ORCID 0000-0001-7740-0203
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Artificial intelligence (AI) is becoming increasingly common in our modern world, revolutionizing various fields, including the information space, which not only gives rise to technological progress but also raises deep philosophical questions that require careful study. This study explores the philosophical aspects of using artificial intelligence (AI) in the information space. Artificial intelligence technologies have made significant progress in recent years, changing various aspects of our lives, including information dissemination, decision-making processes, and human-machine interaction. However, integrating AI into the information space raises deep philosophical questions about the nature of knowledge, ethics, privacy, and the role of human activity.

This study examines these philosophical dimensions and their implications for individuals, society, and the future of AI in the information age. Our goal is to explore the epistemological aspects, ethical implications, privacy issues, and the impact of AI on human activity to understand better AI's role in shaping the information landscape. This interdisciplinary analysis will contribute to an active dialogue about the responsible development of artificial intelligence and its consequences for individuals, society and the future of the information age.

The author proposed recommendations and frameworks for responsible AI development based on transparency, fairness and non-discrimination, accountability, human-centred design, continuous monitoring and evaluation, public awareness and involvement, and international cooperation. By following these guidelines and frameworks for responsible AI development, we can create a future where AI technologies in the information space are designed, deployed, and used in ways that respect human values, promote justice and accountability, and solve societal problems. We can shape a future where artificial intelligence contributes to a more informed, inclusive and ethical information ecosystem through responsible development, transparent practices and proactive measures.

Keywords: *artificial intelligence, information space, philosophical perspective.*

ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ В ІНФОРМАЦІЙНОМУ ПРОСТОРІ: ФІЛОСОФСЬКИЙ АСПЕКТ

Тетяна ГУМЕНЮК

д-р філос. н., проф.

Київський національний університет культури і мистецтв

вул. Є. Коновальця, 36, 01133, Київ, Україна

t_gumenyuk@ukr.net

ORCID 0000-0001-7740-0203

Штучний інтелект (ШІ) стає все більш поширеним у сучасному світі, революціонізує різні сфери, що не тільки породжує технологічний прогрес, але й порушує глибокі філософські питання, які вимагають ретельного вивчення. У статті досліджено філософські аспекти використання штучного інтелекту (ШІ) в інформаційному просторі. Виявлено, що за останні роки технології штучного інтелекту здійснили значний прогрес, суттєво змінивши різні аспекти нашого життя. Зокрема, вони вплинули на процеси поширення інформації та прийняття рішень, а також переформатували способи взаємодії між людиною та машиною. Проте інтеграція штучного інтелекту в інформаційний простір породжує глибокі філософські питання, які стосуються природи знань, етики, конфіденційності та ролі людської діяльності.

У науковій розвідці розглянуто ці філософські виміри та їхні наслідки для окремих осіб, суспільства та майбутнього ШІ в інформаційну епоху. Наша мета — дослідити епістемологічні аспекти, етичні наслідки, проблеми конфіденційності та вплив ШІ на людську діяльність, щоб краще зрозуміти роль ШІ у формуванні інформаційного ландшафту. Цей інтердисциплінарний аналіз сприятиме активному діалогу про відповідальний розвиток штучного інтелекту та його наслідки для окремих людей, суспільства та майбутнього інформаційної ери.

Автор запропонував рекомендації та рамки для відповідального розвитку ШІ, основою яких є прозорість, справедливість і недискримінація, відповідальність, людиноорієнтований дизайн, постійний моніторинг і оцінка, обізнаність і залучення громадськості та міжнародна співпраця. Дотримуючись цих вказівок і рамок для відповідального розвитку штучного інтелекту, ми можемо створити майбутнє, де технології штучного інтелекту в інформаційному просторі розроблятимуться, розгортатимуться та використовуватимуться таким чином, щоб поважати людські цінності, сприяти справедливості та прозорості й вирішувати проблеми суспільства. Завдяки відповідальному розвитку, прозорим практикам і проактивним заходам ми можемо сформувати майбутнє, де штучний інтелект буде сприяти створенню більш інформованої, інклюзивної та етично обґрунтованої інформаційної екосистеми.

Ключові слова: штучний інтелект, інформаційний простір, філософська перспектива.

Introduction

Artificial intelligence (AI) has become an increasingly pervasive presence in our modern world, revolutionizing various domains, including the information space (Pchelyanskyi & Voinova, 2019; Opirskyy et al., 2020). AI technologies are being utilized to analyze vast amounts of data, extract insights, and generate valuable information. From recommendation systems and automated content generation to data analysis and decision-making algorithms, AI has the potential to reshape how we access, consume, and interact with information.

The integration of AI in the information space not only brings forth technological advancements but also raises profound philosophical questions that warrant careful examination (Dobrovol'ska & Shtanko, 2019; Lysenko, 2020; Kornieieva, 2021). While AI offers numerous benefits and opportunities, it is essential to consider the broader philosophical implications that accompany its implementation. Understanding the philosophical aspects of AI in the information space can help us navigate the complex ethical, epistemological, and societal challenges that arise from its use.

Philosophy provides a framework for critically evaluating the implications of AI technologies and their impact on various facets of human existence. By examining these philosophical dimensions, we can delve into fundamental questions regarding knowledge, truth, ethics, privacy, and human agency in the context of AI-infused information systems.

Epistemological considerations play a crucial role in understanding how AI transforms the nature of knowledge and truth in the information space. With AI's ability to process vast amounts of data and generate insights, traditional epistemological frameworks may need to be reevaluated. Questions about the reliability, validity, and interpretability of AI-generated information challenge our understanding of knowledge acquisition and dissemination.

Ethical considerations also come to the forefront when exploring AI in the information space. As AI algorithms make decisions and generate content, questions of responsibility, accountability, and bias emerge. Ensuring ethical standards in AI systems becomes imperative to prevent potential harm and maintain fairness and transparency in information dissemination.

Furthermore, the integration of AI raises concerns about privacy and surveillance. AI's capability to collect, analyze, and interpret personal data poses challenges to individual privacy rights. Striking a balance between leveraging AI for improved information services and protecting individuals' privacy becomes a pressing societal issue.

In addition, the use of AI in the information space impacts human agency and autonomy. The increasing automation of information processes raises questions about the diminishing role of human decision-making and

the ethical implications of relying heavily on AI systems. It becomes necessary to examine how AI affects individual autonomy and the potential risks associated with delegating critical tasks to AI.

Considering these philosophical aspects in AI research is of utmost importance to foster responsible and ethical development, deployment, and use of AI technologies in the information space. By critically reflecting on the implications of AI, we can anticipate and address societal challenges, ensure human well-being, and safeguard fundamental values.

Analysis of recent research and publications

In recent years, there has been a surge of research and publications exploring the philosophical aspects of AI in the information space. Scholars and experts from various disciplines have investigated the profound implications of AI technologies, providing valuable insights into the ethical, epistemological, and societal dimensions of this integration. Over the last 20 years, the field of artificial intelligence has gained significant attention, and its influence has grown in various domains. The usage of terms related to artificial intelligence, including synonyms and variations, in article titles or keywords has likely increased substantially (Fig. 1 and 2).

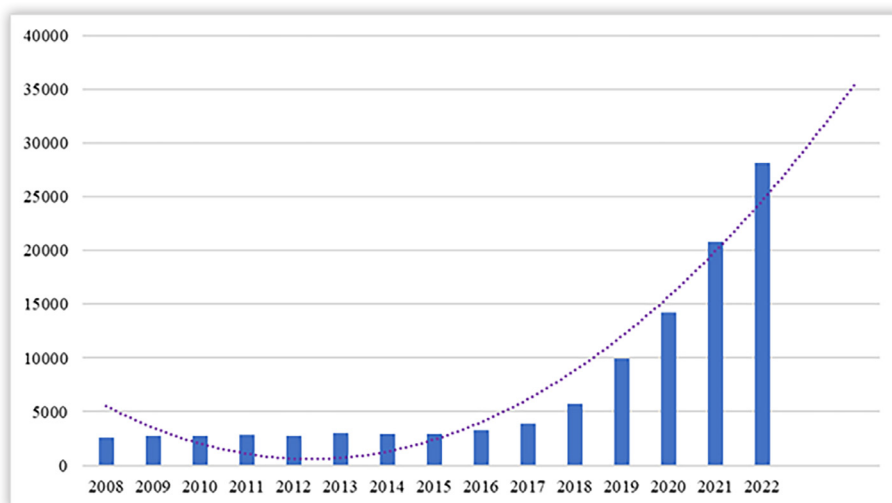


Figure 1 – Number of articles related to AI in the Scopus database for 2008–2022

As we can see, in 2022, the number of articles increased by almost 11 times in the Scopus database and nearly 21 times in the Google Academy database. Developed forecasts indicate that the interest will continue to grow, reaching 55,000 articles in the Google Academy database and 36,000 articles in the Scopus database.

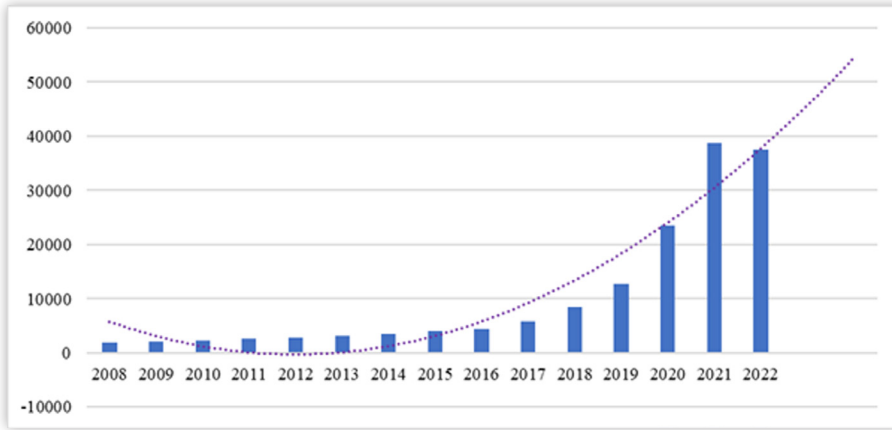


Figure 2 — Number of articles related to AI in the Google Academy database for 2008–2022

Let's analyze some key findings from recent research and publications, shedding light on the philosophical discourse surrounding AI in the information space.

Epistemological Dimensions of the use of artificial intelligence have been studied by scientists for a relatively long time (McCarthy, 1981; Dascal, 1989). Recent studies have examined the impact of AI on the nature of knowledge and truth. Researchers have explored the challenges posed by AI-generated information, highlighting concerns about accuracy, bias, and interpretability (Carabantes, 2020). The concept of “algorithmic knowledge” has been introduced to describe the unique nature of knowledge derived from AI systems. Additionally, scholars have investigated the epistemic authority of AI and its implications for human decision-making and expertise.

— *Ethical Considerations* of AI in the information space have garnered significant attention. Researchers have delved into the ethical implications of AI-generated content, such as deepfakes and misinformation. They have emphasized the importance of ethical guidelines and frameworks to govern the development and deployment of AI technologies (Villegas-Galaviz & Martin, 2023). The concepts of explainability, fairness, and accountability have been central to discussions surrounding the ethical use of AI in information systems (Zarsky, 2016).

— *Privacy and Surveillance*. Recent research has addressed the privacy concerns arising from AI's role in the information space. Scholars have examined the implications of AI-driven data collection, surveillance, and the potential risks to personal privacy (Kim & Sung, 2022). Discussions have centered around the need for robust privacy protections, informed consent, and the balance between security needs and individual privacy rights in the context of AI-powered information systems (Hermansyah et al., 2023).

Scholars have speculated on the future of AI in the information space and its broader socio-political implications. Research has explored the potential challenges and opportunities presented by advanced AI systems, such as superintelligent AI and autonomous information agents. Ethical, legal, and governance frameworks for managing AI in the information space have been proposed, emphasizing the need for interdisciplinary collaboration and ongoing philosophical reflection (Giubilini & Savulescu, 2018; Volkman & Gabriels, 2023).

The analysis of recent research and publications highlights the multi-dimensional nature of the philosophical discourse surrounding AI in the information space. By critically examining the epistemological, ethical, privacy, and human agency dimensions, researchers have deepened our understanding of the challenges and possibilities that arise from the integration of AI technologies. This body of work provides valuable insights and serves as a foundation for further exploration and development of responsible AI practices in the information age.

The purpose of the article. In this research, we will explore the philosophical dimensions of the use of AI in the information space. By examining epistemological considerations, ethical implications, privacy concerns, and the impact on human agency, we aim to gain a deeper understanding of AI's role in shaping the information landscape. This interdisciplinary analysis will contribute to the ongoing dialogue on responsible AI development and its implications for individuals, society, and the future of the information age.

The main part. The *epistemological* dimensions of AI in the information space examine the profound impact of AI on the nature of knowledge and truth, the role of AI in information acquisition, analysis, and dissemination, and the challenges posed to traditional epistemological frameworks.

AI technologies have revolutionized the acquisition and processing of information, raising questions about the nature of knowledge and truth. Traditional epistemology, which emphasizes human reasoning and evidence-based inquiry, faces challenges in the context of AI-generated knowledge. AI systems can analyze vast amounts of data, detect patterns, and make predictions, leading to the emergence of novel forms of knowledge. However, the reliance on data-driven algorithms raises concerns about the potential limitations, biases, and uncertainties associated with AI-generated knowledge. The epistemic authority of AI and its impact on human decision-making and expertise are areas of intense philosophical inquiry.

AI plays a pivotal role in information acquisition, analysis, and dissemination. Machine learning algorithms can gather and process vast amounts of data from diverse sources, enabling the extraction of valuable insights and patterns. AI systems can analyze complex datasets more efficiently and accurately than humans, enhancing our understanding of

the world. Additionally, AI is utilized in content recommendation systems, personalized advertising, and information filtering, shaping the information landscape individuals are exposed to. These advancements raise questions about the reliability, representativeness, and objectivity of AI-mediated information and the potential consequences for knowledge acquisition and dissemination.

The integration of AI in the information space challenges traditional epistemological frameworks. The reliance on algorithms and automated processes raises concerns about the interpretability and explainability of AI-generated knowledge. Traditional epistemology places importance on human reasoning, critical thinking, and justification, whereas AI systems often operate as black boxes, making it difficult to understand their decision-making processes. This challenges our ability to assess the reliability and trustworthiness of AI-generated information. Additionally, the rapid evolution of AI technologies outpaces the ability of traditional epistemology to keep up with the novel epistemic possibilities and ethical considerations brought about by AI.

In navigating these epistemological dimensions, researchers and philosophers are exploring new approaches that integrate AI with existing epistemological frameworks. This includes developing methodologies for evaluating the reliability and biases of AI-generated knowledge, exploring the role of human judgment and interpretation in AI-mediated information, and designing AI systems that are transparent, interpretable, and accountable. Balancing the transformative capabilities of AI with the need for responsible and robust epistemological foundations is essential for harnessing the potential of AI in the information space while addressing the epistemological challenges it presents.

Ethical Considerations. The integration of AI in the information space raises significant ethical considerations. AI algorithms can generate deep fakes, misleading information, or biased content, which can have significant societal consequences. The spread of misinformation, the manipulation of public opinion, and the potential amplification of existing biases are critical ethical challenges. Addressing these implications requires considering the impact of AI-generated information on individuals, communities, and democratic processes. As AI systems become more sophisticated and autonomous, questions of responsibility and accountability arise. Who is responsible when an AI system generates harmful or misleading information? Should developers, operators, or users bear the responsibility? Ensuring clear lines of accountability and defining legal and ethical frameworks for AI systems is crucial. This includes clarifying the roles and obligations of various stakeholders, establishing mechanisms for redress in the event of harm, and promoting transparency and ethical oversight throughout the AI lifecycle.

AI algorithms are not immune to biases and may perpetuate existing societal prejudices. This raises concerns about fairness and equity in information access and decision-making processes. Bias in AI algorithms can lead to discriminatory outcomes, reinforce systemic inequalities, or marginalize certain groups. Ensuring fairness and transparency in AI algorithms is essential. This includes conducting rigorous testing and auditing to identify and mitigate biases, fostering diverse and inclusive development teams, and promoting algorithmic transparency to enhance accountability and trust in AI systems.

Ethical considerations in the use of AI in the information space require proactive measures to address potential harms and ensure that the benefits of AI are distributed equitably. Ethical guidelines, regulations, and standards are being developed to guide the responsible development and deployment of AI technologies. Collaboration between researchers, policy-makers, industry stakeholders, and civil society organizations is vital to navigate the complex ethical landscape and strike a balance between innovation, societal well-being, and the protection of fundamental rights and values. By addressing ethical implications head-on, we can foster a trustworthy and socially responsible AI ecosystem in the information space.

Privacy and Surveillance. The integration of AI in the information space has significant implications for privacy and surveillance. This section explores AI's role in data collection and surveillance, privacy concerns in the age of AI-powered information systems, and the challenges of balancing security and individual privacy rights. AI technologies have enabled unprecedented capabilities in data collection and surveillance. With the ability to process vast amounts of data, AI systems can collect, analyze, and interpret personal information from various sources. This includes data gathered through social media, internet browsing habits, facial recognition, and sensor networks. AI algorithms can extract patterns and insights from these data, raising concerns about the extent and granularity of surveillance in society. The integration of AI in surveillance systems has implications for both public and private sectors, affecting individuals' privacy in various contexts. The use of AI-powered information systems raises significant privacy concerns. AI algorithms can infer sensitive information about individuals, their behaviors, preferences, and identities, often without their explicit consent or knowledge. The aggregation of personal data by AI systems can create detailed profiles that infringe upon individuals' privacy and autonomy. Moreover, the potential for data breaches, unauthorized access, and misuse of personal information poses additional risks to privacy. Individuals may feel exposed and vulnerable in an environment where AI systems continuously monitor and process their personal data.

Finding the right balance between security and individual privacy rights is a complex challenge. While AI-powered surveillance systems can

enhance security measures, such as in public safety or national defense, they also raise concerns about potential abuses and invasions of privacy. Striking a balance requires transparent and accountable governance frameworks that ensure the proportionality, necessity, and legality of surveillance activities. Implementing robust data protection measures, privacy by design principles, and meaningful consent mechanisms can help protect individuals' privacy rights while still addressing legitimate security concerns.

Safeguarding privacy in the age of AI-powered information systems requires a multidimensional approach. This includes enacting comprehensive privacy laws and regulations that govern the collection, storage, use, and sharing of personal data. Additionally, promoting transparency and accountability in AI systems is crucial, ensuring individuals have control over their data and understand how it is being utilized. Emphasizing privacy-enhancing technologies, secure data handling practices, and promoting public awareness and digital literacy can empower individuals to protect their privacy in the face of evolving AI technologies.

Ultimately, achieving a balance between privacy and security necessitates ongoing dialogue among policymakers, technology developers, civil society organizations, and the public. By respecting and upholding privacy as a fundamental human right while addressing legitimate security concerns, we can navigate the ethical and legal challenges posed by AI-powered surveillance in the information space.

Human Agency and Autonomy. The integration of AI in the information space raises important considerations regarding human agency and autonomy. This section explores human-machine interactions and the diminishing role of human agency, the implications for individual autonomy and decision-making, and the ethical considerations surrounding the augmentation of human capabilities with AI.

AI technologies are increasingly automating tasks traditionally performed by humans, potentially diminishing the role of human agency. As AI systems become more capable and autonomous, there is a shift in decision-making authority from humans to machines. This raises questions about the extent to which humans retain control and agency in the information space. Human-machine interactions can range from simple assistance to complex collaborations, and understanding the dynamics and implications of these interactions is crucial in preserving human agency and ensuring that AI systems serve as tools that enhance human capabilities rather than replacing human involvement. The integration of AI in the information space can have significant implications for individual autonomy and decision-making. As AI algorithms make decisions, provide recommendations, or generate content, individuals may face challenges in exercising their autonomy and making informed choices. The reliance on AI systems for information filtering, content curation, and decision sup-

port can influence individual preferences, limit exposure to diverse perspectives, and even manipulate behavior. Preserving individual autonomy in the face of AI technologies requires understanding the impact of AI on decision-making processes, fostering transparency in AI systems, and empowering individuals to have control and agency over the AI-mediated information they encounter.

The ethical considerations surrounding the augmentation of human capabilities with AI are essential. While AI can enhance human performance, there are ethical questions regarding the appropriate extent and purpose of augmentation. Striking the right balance between leveraging AI to empower individuals and maintaining human autonomy and dignity is paramount. Ethical considerations include ensuring fairness, avoiding discrimination, promoting inclusivity, and minimizing biases when integrating AI into human decision-making processes. It is crucial to develop AI systems that are transparent, explainable, and align with human values, allowing individuals to understand and control the AI's influence on their agency and decision-making.

Navigating the complexities of human agency and autonomy in the age of AI requires interdisciplinary collaboration and thoughtful design of AI systems. It entails integrating ethical principles into the development and deployment of AI technologies, promoting human-centered approaches, and recognizing the importance of human values, ethics, and judgment. By considering the ethical implications and fostering responsible practices, we can harness the potential of AI to augment human capabilities while upholding individual autonomy and preserving human agency in the information space.

The Future of AI in the Information Space. Currently, speculative discussions are taking place regarding the potential trajectory of AI technologies, ranging from the belief that AI will annihilate humanity (Bohdanok, 2023) and calls for its prohibition (Yudkowsky, 2023), to the notion that AI will enhance our lives in the future ("8 ways AI can", n.d.).

These discussions also explore possibilities such as the development of superintelligent AI, advanced natural language processing, and the emergence of autonomous information agents. Speculations also involve the integration of AI with new technologies like augmented reality and virtual reality, creating new ways of consuming information and interacting. These discussions provide insights into the transformative potential of AI in shaping the information landscape and its impact on society.

The future of AI in the information space presents significant socio-political implications and challenges. AI technologies have the power to reshape industries, disrupt employment markets, and influence power dynamics. They can exacerbate existing inequalities, create new ethical dilemmas, and impact democratic processes. The increasing sophistication

and pervasiveness of AI raise concerns about data privacy, algorithmic accountability, and the concentration of power in the hands of a few powerful entities. Addressing these challenges requires proactive measures, such as developing robust regulatory frameworks, fostering ethical standards, and ensuring inclusivity in AI development and deployment.

Possible Guidelines and Frameworks for Responsible AI Development.

To ensure responsible AI development in the information space, possible guidelines and frameworks are being proposed (Fig. 3).

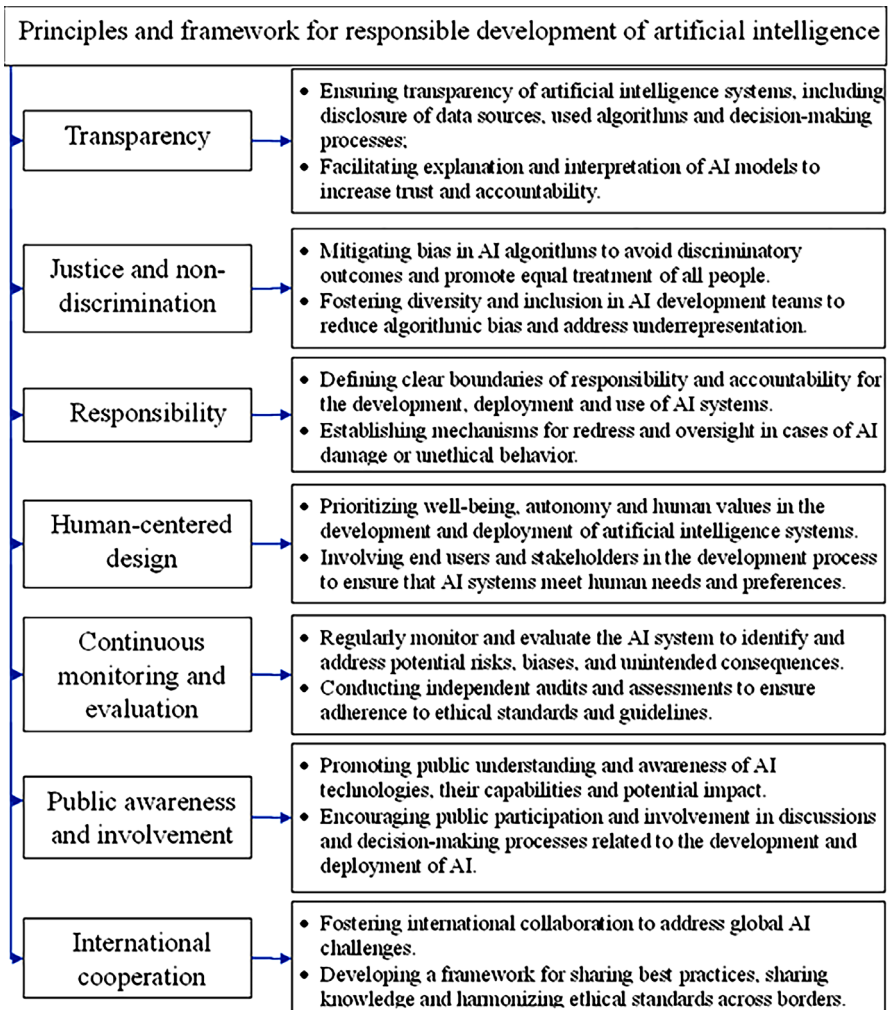


Figure 3 — Recommendations for the responsible development of artificial intelligence (author's development)

These guidelines focus on principles such as transparency, fairness, accountability, and human-centric design. They emphasize the need for interdisciplinary collaboration, involving experts from philosophy, ethics, law, and technology. Additionally, guidelines call for continuous monitoring and assessment of AI systems, promoting public awareness and engagement, and facilitating international cooperation to address global challenges associated with AI. Developing responsible AI guidelines and frameworks is crucial for harnessing the benefits of AI while mitigating potential risks and ensuring alignment with societal values and goals.

As the future unfolds, ongoing research and dialogue will shape our understanding of AI's trajectory in the information space. It is essential to approach AI development and deployment with a forward-thinking mindset, anticipating and addressing potential challenges and societal implications. By proactively shaping the future of AI through responsible practices and ethical considerations, we can maximize the positive impact of AI on the information landscape while safeguarding human values, societal well-being, and the principles of a democratic and inclusive society.

Conclusions

In conclusion, the use of artificial intelligence (AI) in the information space brings about significant transformations and raises profound philosophical questions. Throughout this research, we have analyzed various aspects of AI's impact from a philosophical perspective. We have explored epistemological dimensions, ethical considerations, privacy and surveillance concerns, the role of human agency and autonomy, and speculative discussions on the future of AI in the information space.

Key findings and insights from our analysis highlight the need for careful examination and thoughtful approach in integrating AI in the information space. AI's impact on knowledge and truth challenges traditional epistemological frameworks, necessitating new methodologies and considerations for assessing reliability and biases in AI-generated knowledge. Ethical concerns arise from the potential misuse of AI-generated information and content, requiring responsible development, accountability, and fairness in AI systems. Privacy and surveillance implications call for robust data protection measures and a balance between security and individual privacy rights. The diminishing role of human agency and autonomy emphasizes the importance of preserving human control and decision-making in the face of AI technologies. Lastly, considering the future of AI, ongoing philosophical reflection is crucial to navigate potential challenges and societal implications.

To address these multifaceted issues, an interdisciplinary approach is imperative. Collaboration between philosophers, ethicists, technologists, policymakers, and other stakeholders is necessary to develop guidelines,

frameworks, and regulations that ensure responsible AI development and deployment. By following these guidelines and frameworks for responsible AI development, we can foster a future where AI technologies in the information space are developed, deployed, and utilized in a manner that respects human values, promotes fairness and accountability, and addresses societal challenges. Ongoing research, dialogue, and adaptation of these guidelines will be necessary as AI continues to evolve and its impact in the information space unfolds. An interdisciplinary perspective helps bridge the gap between technological advancements and philosophical considerations, promoting a holistic understanding of the implications and consequences of AI in the information space.

Furthermore, this research underscores the importance of ongoing philosophical reflection on AI's impact in the information space. As AI technologies continue to evolve and permeate various aspects of our lives, it is essential to continually examine and reassess the ethical, epistemological, and societal implications they bring. Engaging in philosophical discourse helps us navigate the complexities, identify potential risks, and shape the development and deployment of AI in a manner that aligns with our values, fosters inclusivity, and safeguards human well-being.

In conclusion, by embracing an interdisciplinary approach and engaging in continuous philosophical reflection, we can harness the potential of AI in the information space while addressing the challenges and ethical considerations it poses. Through responsible development, transparent practices, and proactive measures, we can shape a future where AI contributes to a more informed, inclusive, and ethically grounded information ecosystem.

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