The Ethical Consequences of Artificial Intelligence in the Healthcare Industry: Luciano Floridi's Viewpoint

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Abstract

This paper examines the ethical consequences of Artificial Intelligence (AI) in the healthcare industry, drawing on Luciano Floridi's Information Ethics. It utilizes conceptual clarification and ethical analysis to project that while AI holds immense potential to significantly improve healthcare through personalized treatment recommendations, diagnostic efficiency, and administrative enhancements, it also raises serious ethical concerns. These concerns include issues related to patient confidentiality, data security, bias in algorithmic decision-making, displacement of human professionals, and accountability in healthcare delivery. Floridi's Information Ethics focuses on the moral significance of information and the intrinsic value of information, proposing that ethical considerations must go beyond human actors to include informational entities and systems; particularly relevant in understanding the moral implications of AI, highlighting the responsibility of AI developers to ensure ethical integration, especially in healthcare settings. This paper examines Floridi's concept of the "infosphere" and argues that AI systems in healthcare should be designed with respect for human dignity, transparency, and moral responsibility. It also stresses that AI must be carefully incorporated into healthcare to improve human cognitive capacities rather than replace them. The paper underscores the importance of ensuring equitable access to AI-driven innovations and stresses that human dignity should remain at the forefront of healthcare delivery, even as technology evolves. By embracing Floridi's ethical principles, the healthcare industry can effectively navigate the complexities posed by AI, safeguarding human well-being and ensuring ethical integration. This study contributes to the ongoing discourse on the responsible use of AI in healthcare, highlighting the need for interdisciplinary approaches to address the ethical challenges and maximize the benefits of AI advancements.

Keywords: *Artificial Intelligence, Healthcare, Ethics, Luciano Floridi, Information Ethics.*

Introduction

Artificial Intelligence (AI) offers a transformational mark in different industries in which healthcare is of no exemption, especially with significant advancements in personalized treatment recommendations, diagnostic efficiency,

and administrative enhancements; there is no doubt that it has its ethical dilemma. The impact of AI with its promotion of technological advancement remains irresolute without addressing the ethical concerns it brings which must be given attention to; ensuring that AI provides an adequate contribution to healthcare systems without breaching the patient's moral integrity: i.e patient confidentiality, data security, algorithmic biases, and the displacement of human professionals. Luciano Floridi's Ethical perspective on Information Ethics offers compelling insights into how the moral concerns that AI introduced can be solved. Florida argues for a more expansionist way of seeing moral responsibility; according to him, moral responsibility should not be limited exclusively to human-human interaction but should also involve how humans treat the available information, data, and technological systems (Floridi, 2013, p. 45). So, it must be understood that moral consideration should apply to the handling and collection of information which involves how data is collected, managed, and utilised – this promotes patients' confidentiality such that the information entities (AI systems and databases) must be given critical attention to because it has lots of ethical impact on the well-being of individuals.

According to Floridi, he contends that the ethical use of information is essential in preventing harm and ensuring fairness in healthcare when the AI systems are held in high esteem the human dignity, patient autonomy, and data security (Floridi, 2013). There is no doubt that AI has improved healthcare but improper handling or lack of maintaining confidentiality, as well as impediments in allowing patients to autonomously make a better-informed decision about their care, can undermine human values. By extension, to better understand the transformational role AI plays in the lives of individuals and society in a healthcare context, his philosophical discourse needs to be addressed, called, "The Fourth Revolution". In his discourse, he put it forward that AI offers a groundbreaking shift characterised by revolution as the introduction, adoption, and integration of AI challenges boundaries existing between humans' and machines' usability (Floridi, 2014, p. 103). So, in healthcare, the integration of AI may seem intriguing as it provides a transformational landmark:

When it begins to take roles traditionally done by medical professionals; while this can improve cognitive capacities, Floridi warns against the potential dehumanization of medical practices if AI is allowed to replace rather than complement human judgment (Floridi, 2013, p. 95).

While AI incorporation proved tremendously significant because it has the potential to perform tasks which are traditionally performed by medical professionals, for instance recommending treatments and diagnosing diseases –

this provides one of the easiest ways to enhance human cognition and process large amounts of data in a very shorter period compared to when such is manually done; it can be dangerous according him to depend solely on AI as it can replace the humane and human contribution to medical care.

However, one of Floridi's concerns is to maintain and safeguard patients' data and privacy, especially in the age where AI depends mainly on vast amounts of healthcare data (Floridi, 2016). Florida emphasises that it is of utmost importance to handle the patients' Sensitive Personal Information (SPI) like the medical histories, genetic data, and treatment records; thereby upholding confidentiality and avoiding mishandling. So, a strict ethical guideline must be put in place to govern how data are collected, stored, and shared, assuring maximum protection of privacy rights in the pursuit of AI-driven healthcare advancements. Furthermore, according to him, it becomes complex if the designed healthcare AI algorithm is drawn upon the data that reflects existing societal inequalities or biases, it can perpetuate or amplify these biases (Floridi, 2020, p. 34). Thus, this calls for foresight based on insight to put inclusiveness in mind when AI systems are designed to avoid data that reinforces healthcare disparity; highlighting the need for ethical standards for overseeing the AI systems prioritise patients' well-being. This paper argues that while Artificial Intelligence (AI) has the potential to transform healthcare by improving diagnostic efficiency, personalized treatments, and administrative processes, it also presents significant ethical concerns, which must be addressed by incorporating Luciano Floridi's Information Ethics to ensure that AI systems respect human dignity, maintain transparency, and prioritize patient well-being through responsible and ethical integration.

Floridi's information ethics and the fourth revolution

Floridi's concept of Information Ethics stems from the philosophical discourse, which sees the world as an "infosphere", that is, a space or region where both humans and non-human entities interact together via information; arguing that the transition of AI represents a Fourth Revolution has caused a great shift in the way in which we understand and view the world around us, especially our role in the universe which is quite different from from the previous revolutions (Floridi, 2014, p. 10). Furthermore, AI has significantly influenced how human beings make informed use of information such that moral consideration or ethical responsibility is not only extended to human beings alone but also to non-human entities with the intent that these AI systems or modern technologies must guarantee human dignity as the core principle of meaningful "existent" (essence). So, this is suggestive of the fact that in healthcare, moral responsibility should be

extended to AI systems in the management of patients' sensitive information (Floridi, 2014, p. 10). So, information becomes a central point of discourse of moral consideration or responsibility such that there is the need to scrutinize the flow of medical data being handled, stored, and used. It will be problematic to conjecture that the machine or AI systems can pervert available information, will it not be that humans lack oversight to handle, store, and make use of information at their disposal?

According to Floridi, he thinks that the rights and well-being of patients can be preserved seeing that data is beneficial on their own and the moral standard is using data such that it will promote patients positive outcomes, protect and preserve privacy, and respect the person's free will (Floridi, 2013, p. 47). Florida makes sense of data in healthcare as an important set of values because it can improve the patient's care through faster diagnoses, personalized treatments, and more efficient resource management. In the same vein, to neglect the importance of the management of information is to put the lives of patients at risk. But, in the management of information, data must be used in the acknowledgement that the patients should have full disclosure of how their medical information will be used being that unscrupulous disclosure or production of personal sensitive information will amount to breach of trust. The basis of his thoughts is that the moral obligation that is concerned with using AI in healthcare is that it must lead to greater consequences: in protecting the rights and the dignity of individuals.

The issue of patient confidentiality and data security

One of the ethical concerns in AI-driven healthcare that needs urgent examination is the issue of the protection of patient confidentiality and data security. As such, the collection, storage, and use of patient data must be properly protected. According to Florida, argues in his discourse, *Infosphere* that AI systems must be privy to the data's security and the patient's confidentiality; leading to the respect of individuals' free will from which their data originates (Floridi, 1999). The privacy of patients can be violated if it is not properly managed. Ethically, this is because AI systems heavily depend on the patient's data to generate evaluations and recommendations. In healthcare, it is crucial that the AI systems, upon the responsibility placed on them, must protect the personal data. Contrarily, won't it be an aberration to give up such an enormous responsibility that can't function without the manufacturing and operations of man? It is clear that machines only respond to manufacturers' designs and their operations are determined according to the manual in which the manufacturer designed them. Hence, to say AI systems can be responsible is to see them as

thinking objects which can choose; if this is not so then the responsibility must be placed on the manufacturer who designed such informational entities.

However, Floridi sees the need to preserve the sensitive medical information of patients, understanding that the value of any informational entities lies in the protection against data manipulation or the breach, and unauthorized access by the third party (Floridi, 2013, p. 89). It is a demanded effort to handle effectively the personal medical information of patients being made privy against unauthorized access because the failure to meet this ethical responsibility may heighten the abuse of an individual's medical records and could lead to identity and medical theft or fraud. AI technologies must give proper attention to data security to avoid loss of trust in the healthcare system. Not limited to this, to increase the maximum level of trust in the healthcare system, Floridi's philosophy gives attention to the protection of data usability rights, that is, patients must have the full knowledge of how their data will be used; thereby increasing the level of confidence in data protection. This follows necessarily that patients are giving out their information based on trust and have full knowledge of the reason they are releasing personal health information which is afterwards done out of consent.

Also, trust is integrity and integrity is of utmost importance in all the endeavors of human living, especially in the healthcare system. In this way, trust could only be established by ensuring data security measures and protocols live up to this expectation. So, Floridi does not only affirm that data security is utmost for the establishment of trust, but he also emphasizes the design of AI systems that incorporate ethical principles into the technology designs, as such will help to keep the patient's data confidentiality in mind. He believes that encrypted data protocols and transparent data-sharing policies should be integral parts of any AI-driven healthcare solution (Floridi, 2011, p. 248). Lastly, privacy is an integral part of one's identity because to steal one's personal information is to put an individual in danger – so, in healthcare, any misusage, non-transparent collection, and wrong storage of data amounts to exploitation.

The problem of accountability in AI-driven healthcare

As AI becomes more involved in healthcare decisions, as it has raised more complex ethical concerns and issues, the problem of accountability undoubtedly needs a promising solution. Floridi contends that AI makes mistakes, such as wrong diagnosis or recommendation of treatment (Moor, 1985). When this happens, who should be held responsible: is it the AI developers, healthcare providers, or the AI systems? This question has generated a lot of arguments and in the ample sphere of Floridi's discourse, these questions will be addressed.

According to him, he thinks that "responsibility should be distributed among all entities involved, with a particular focus on ensuring transparency in the decision-making process of AI systems." (Floridi & Sanders, 2004) To him, the justice system requires that all parties should remain accounted for since they are working together to perform an interdependent function. If all parties should be involved in the accountability process, who should remedy the harm when AI systems provide a wrong diagnosis or incorrect treatment plans? Floridi believes that to achieve transparency there is the need for an interdependence function such that each part of the systems should help one another; his thoughts remain resolute by believing that, "healthcare institutions and AI developers should work unanimously to create systems that track and verify AI decisions, guaranteeing that human supervision remain important in the process." (Floridi, (2013, p. 130) Given this, it can be deduced that it will be erroneous and detrimental to the patient's well-being if AI is left to replace human cognitive ability. AI should be used as a tool to heighten human cognition, that is, in healthcare – it can assist in the medicine prescription, treatment plans, etc. Healthcare should be acquainted with the technical know-how of the usage, identifying errors embedded in AI systems; it should be seen as oversight rather than replacing human cognition.

Another ethical implication of over-reliance on AI systems is that it can lead to the dehumanization of patients' care; thereby establishing that one of the roles of a medical professional is to always check, and modify where necessary the AI-generated recommendation to guarantee that the dignity and well-being of patients are protected (Floridi & Sanders, 2004). However, the role of humans is to oversee the recommendations and decisions made by AI and help humans enhance their cognitive ability in terms of remembrance and effective decision-making. Thus, this will create a sense of responsibility in the different actors of healthcare outcomes.

Addressing the problem of algorithm bias

The introduction of AI has increased the level of productivity in the healthcare system and one of the problems it has generated is that of the need to address the problem of algorithm bias. This is because the operations of AI are heavily dependent on the experiences, culture, and personal orientation of the developer; they may import data that is influenced by biases resulting in the under-representation of certain patients (Binns, 2018). This is evident when the algorithm is computed based on the conception of the Western population which may not necessarily capture the African race; this in turn sends a signal of failure to provide an accurate diagnosis for patients from different ethnic backgrounds. Floridi recommends that inclusion should be prioritized in the way in which AI systems

are trained to curtail a wrong medical prescription and avoid inequality of healthcare outcomes. In other words, the AI systems should not only be trained in datasets that include the marginalized population but also stress the moral responsibilities of AI developers to constantly improve these data sets (Floridi, 2013, p. 120). Furthermore, an AI may be trained from the datasets of the Western populations; there should also be a conscious effort to address the way AI makes decisions. This can be seen in the data that projects historical inequality or non-exclusiveness of women, this will affect how the AI will project inequality. A critical question that arises from this thought is that if AI developers are influenced by cultural, and personal thoughts, how is it possible to delimit biases since it is unknown to such developers? Also, what brings about the introspection in developers that they are projecting biases and what are the determining factors that give the knowledge that those developers are wrong since knowledge is dynamic? However, developers must constantly be aware that their knowledge can be faulty at a particular time – this understanding will bring the need to remove where necessary the biased datasets, and this will drastically improve the AI's decision-making thereby promoting justice.

Moreover, following this thought process, it deflects AI machines from being a responsible entity as against the claim and contention of Floridi. In the light of addressing bias in healthcare, his philosophy provides an ethical ground for moral responsibility and commitment to promote fairness through the monitoring of AI systems for signs of bias – this leads to regular audits of AI systems, providing suitable care for all patients without stereotyping.

The role of healthcare professionals in an AI-driven future

The understanding that AI systems can promote and heighten bias, and the potential threats that it brings will show the need for total dependence on the deliverables of AI by healthcare professionals. But, we have stressed from the previous discussions that AI provides robust support to healthcare professionals, but it will also be dangerous to rely on it. According to him, she argues: "AI should complement human cognitive capacities, allowing healthcare professionals to focus on more complex, nuanced tasks that require empathy and moral judgment." (Floridi & Cowls, 2019) So, the potential danger of AI has been known and it will lead to a lack of understanding to want to depend solely on AI decisions. Furthermore, medical professionals must oversee whether the answers to the questions generated by them perpetuate bias or misrepresent certain populations. He stresses the importance of oversight in ensuring that AI does not take the place of medical professionals when making ethically complex decisions.

The implication of this is that in healthcare practices the human decision remains paramount – it is an ordeal for healthcare professionals to make use of their cognitive ability when drawing from the decisions of AI. Instead of seeing AI being a technology that cannot be deformed by mistake, it should be seen as a tool for collaboration: healthcare can leverage multiple benefits to analyse data quickly while guaranteeing that patient care remains personalized and compassionate (Wachter, 2015). In the same vein, there must be a balance between efficiency and empathy by limiting the idea that AI systems replace human cognition rather than complement it.

One of the reasons why Floridi's argument remains crucial is because AI doesn't have mental, empathetic, and moral reasoning of its own, so it is necessary to seek a balanced incorporation of AI with human cognitive ability. There is a concern here: who determines the mean calculations? What are the parameters to determine a balanced integration of AI with human cognition? To answer these questions, Floridi's positions involve a multidisciplinary approach, human oversight, accountability, ethical alignment of values, and mitigation of bias are all key to maintaining patient care, and promoting justice.

Ethical regulations and governance of AI in healthcare

Floridi advances his quest for a more robust ethical governance framework to ensure the responsible use of AI in healthcare. His philosophy involves a multidisciplinary approach of inclusiveness which thought that no unit is independent and every unit in a system must work together to achieve functional objectives. He remains resolute in his complementary idea by contending that AI developers, policymakers, and health professionals must work together to create international standards that prioritize patient well-being and fairness (European Commission, 2020). To entrench the rights and health of patients, and as well as the just outcomes is when part of the system are not performing their roles complementarily. So, it is imperative that these units complementarily create standards and guidelines that will maintain the ethical use of AI to protect the rights and health of patients in healthcare systems. Such guidelines and standards should ensure that the rights of patients are well-protected, such as privacy, freewill to release their personal sensitive information. In addition to this, regular assessments should be put in place to ensure that there are constant audits on how AI systems affect positive outcomes. More so, more stringent systems must be put in place to address ethical concerns that lead to the potential harm caused as a result of the misuse of datasets. By following these standards, it will lead to more accountable structures whereby all units within a system will be able to perform a

functional role of ensuring the safety, and well-being of patients in AI healthcare. Not only limited to this, he also set out a practical ideal of these standards: first, AI machines should be built in such a way that they follow ethical principles; second, regular assessments of AI systems which affect the impact of healthcare outcomes; third, sets of clear operational principles for addressing ethical dilemmas.

One of the measures that makes his theory stand out is that he argues for a preventive rather than a remedial measure to a more sustainable approach to AI development: "he emphasis on proactive ethical design suggests that AI systems should be built with ethical safeguards from the outset, rather than relying on reactive measures after harm has occurred." (Floridi, 2019, pp. 261-262) This involves preparing for issues while they happen; in the same vein, a preparatory approach should be employed in addressing a known threat or potential ethical issues such as privacy encroachment, algorithm bias, during the process of building the AI software. Finally, Floridi's approach to addressing the problems of human dignity, fairness, and transparency provides vivid plans to tackle the issue raised by AI development.

Conclusion

In conclusion, the ethical consequences of Artificial Intelligence (AI) in healthcare must be approached with great caution and moral responsibility, as underscored by Luciano Floridi's Information Ethics. AI undoubtedly holds the potential to revolutionize healthcare by improving diagnostic accuracy, treatment personalization, and administrative efficiency. However, these advancements must not come at the cost of human dignity, privacy, or fairness. Floridi's concept of the "infosphere" calls for a broader ethical perspective, extending moral consideration to informational entities and systems, emphasizing that AI developers and healthcare institutions must prioritize ethical integration throughout the development and application of AI technologies.

Protecting patient privacy and ensuring data security is paramount, as healthcare AI systems rely heavily on sensitive personal information. AI should not only respect patient confidentiality but also allow for informed decision-making, thus preserving patient autonomy. Furthermore, Floridi's concerns about algorithmic bias and accountability highlight the need for inclusive, fair, and transparent AI systems to avoid exacerbating healthcare inequalities or dehumanizing medical practices.

It is essential to maintain human oversight in AI applications, ensuring that AI serves as a complementary tool to enhance, rather than replace, human

cognitive capacities. This balance is crucial to preserving the human element in healthcare and avoiding over-reliance on technology.

Ultimately, incorporating Floridi's ethical principles offers a framework for responsibly navigating the challenges AI poses in healthcare. By focusing on human dignity, transparency, and fairness, AI can be ethically integrated into healthcare systems, maximizing its benefits while safeguarding patient well-being. As AI continues to evolve, interdisciplinary approaches and international cooperation on ethical standards will be critical to addressing the complexities of AI in healthcare and ensuring its responsible use.

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