

ARTIFICIAL INTELLIGENCE IN THE AFRICAN CONTEXT: A PHILOSOPHICAL AND ETHICAL INQUIRY

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ABSTRACT

This paper provides a comprehensive philosophical and socio-technological analysis of Artificial Intelligence (AI) in the African context, by emphasizing how AI aligns with and promotes the unique cultural, ethical, and developmental values of the African people. It begins by exploring foundational concepts of AI, including its definitions, core components, and typologies. The study then pivots to the African context by using the philosophy of *Ubuntu* as a case study in expressing the intrinsic African worldviews and how AI was gradually integrated into the African perspective. This paper submits that though the basic elements of AI can be Western, it should not be seen as a propagation of Western worldviews in the African milieu, but should be regarded as a model that is adapted by Africans to foster the African core values and contributions to humanity. The paper adopts the analytic and quantitative research methods to examine how African philosophy interfaces with AI technologies, and to consider real-world case studies such as the Masakhane Project, Ubenwa, and SunCulture, all of which are AI models created by Africans to promote African worldviews. This paper argues for the indigenization of the AI models used in Africa, to reflect African epistemologies, ethical norms, and communal aspirations; and that with the right intentions and investments in policy making, education, and cultural preservation, AI can become a transformative tool for Africa's sustainable future.

Keywords: Artificial Intelligence (AI), African, *Ubuntu*, Deontology, Utilitarianism, Virtue ethics.

INTRODUCTION

The impact of Artificial Intelligence (AI) cannot be overstated in our world today. This technological innovation is borne out of the progress of scientific discoveries, which have gone a long way in transforming our society and the world at large, especially in areas of agriculture, banking, health, and machinery production. Nick Bostrom, in emphasizing the importance and evolution of AI, avers that “machine intelligence is the last invention that humanity will ever need to make.”¹

Africa is rapidly becoming part of this latter-day invention in almost all capacities. This is evident in her potential to adopt the use of AI models into various aspects of life, such as healthcare access, preservation of cultural heritage, decolonization of knowledge systems, promotion of African people and culture, and the fostering of economic growth and sustainable development. For instance, the *Masakhane Project*,² a grassroots Natural Language Processing (NLP) initiative across Africa, is an AI system that was created by an African to translate African research projects into multiple African languages; this is in a bid to preserve and promote collaboration as well as the African languages, people, and culture, many of which were historically downgraded by Westerners and are at risk of extinction. Thus, AI from the African perspective should not be regarded as a tool of adoption or seen as an extension of Western ideologies in the African milieu, but should be regarded as a medium for cultural expression, local problem-solving, and building the African people and culture.

It is to this end that this paper aims to critically expose the notion of AI from the African perspective. In executing this task, it will examine the historical trajectory of AI in Africa and then adopt the concept of *Ubuntu* as a case study, which is an ethical framework that defines the African

¹ Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford: Oxford University Press, 2014), 1.

² Iroko Orife et al., “Masakhane – Machine Translation for Africa.” *arXiv* preprint, March 13, 2020. <https://arxiv.org/abs/2003.11529>; Wilhelmina Nekoto et al., “Participatory Research for Low-Resourced Machine Translation: A Case Study in African Languages,” *Findings of the Association for Computational Linguistics: EMNLP* (2020): 2144–2160. <https://aclanthology.org/2020.findings-emnlp.195/>.

characteristics and how AI models reflect these features. It will then conclude by looking at the problems faced by AI and its contemporary relevance.

1. CONCEPTUAL ANALYSIS OF ARTIFICIAL INTELLIGENCE (AI)

a. WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial intelligence (AI) is that branch of computer science that focuses on creating machines to perform tasks that typically require human intelligence. These tasks include learning and recognizing patterns, reasoning, solving problems, and making informed decisions. It is important to note before delving into understanding the notion of AI that the concept has no unified definition; this is because different scholars have approached it from their various perspectives.

John McCarthy, in 1956 at a conference in Dartmouth, coined the term “artificial intelligence” to mean “the science and engineering of making intelligent machines, especially intelligent computer programs.”³ This became the foundational definition for artificial intelligence that has been adopted for use today.

Stuart Russell and Peter Norvig (2010) gave AI a more pragmatic nuance when they noted that AI is “the study of agents that receive percepts from the environment and perform actions.”⁴ This broadens the notion of AI to include a system that interacts with its immediate environment. It is premised on this that they propose four ways of defining AI: as (a) acting like humans, (b) thinking like humans, (c) thinking rationally, and (d) acting rationally.⁵

Rich Elaine, an American computer scientist, defines artificial intelligence using a comparative analysis; for her, it is “the study of how to make computers do things at which, at the moment, people are better.”⁶ This connotes the idea that AI is not a static innovation but an evolving activity aimed at transcending human abilities. Irving John Good puts this idea clearly when he noted that “the intelligence of man would be left far behind... thus, the first ultra-intelligent machine is the last invention that man need ever make.”⁷ This illustrates how AI models are becoming increasingly sophisticated and flourishing in our world today.

More so, AI has been defined from a hampered dimension that tries to undermine its potential in comparison to the intelligence of man. Kate Crawford (2021), a Senior Principal Researcher at Microsoft, argues that “AI is neither artificial nor intelligent, and that it is made from natural resources, data labor, and real people.”⁸ This definition by Crawford connotes the dominance of humans over the operation of AI. It also shows that what we consider to be AI is simply a reflection of the intelligence of man. This idea is also reinforced by Frank Pasquale, a professor of Law and the author of *New Law Robotics*. He critiques the myth of autonomous AI and emphasizes the need for human oversight and ethical boundaries. He argues strongly that AI systems are tools and not minds, and are meant to complement, and not replace, human expertise.⁹

³ John McCarthy, “Proposal for the Dartmouth Summer Research Project on Artificial Intelligence,” 1956, <http://jmc.stanford.edu/articles/dartmouth/dartmouth.pdf>.

⁴ Stuart, Russell, and Norvig, Peter, *Artificial Intelligence: A Modern Approach*. 3rd ed. (Upper Saddle River, NJ: Prentice Hall, 2010), 34

⁵ Stuart Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach*, 3rd ed., 2

⁶ Elaine, Rich, *Artificial Intelligence* (New York: McGraw-Hill, 1983), 3.

⁷ Irving J. Good, “Speculations Concerning the First Ultrainelligent Machine,” *Advances in Computers* 6 (1965): 33.

⁸ Kate Crawford, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*, (New Haven: Yale University Press, 2021), 8.

⁹ Frank Pasquale, *New Laws of Robotics: Defending Human Expertise in the Age of AI* (Cambridge, MA: Harvard University Press, 2020), 3–5.

However, with the different definitions highlighted above, we can say that they all conceive AI to be a system that extends or replicates human cognitive or functional capabilities. Hence, for this paper, we shall be defining AI as the ability for machines to do things that require cognitive functions, simulating those of the human person, such as thinking, learning, and problem-solving.

b. THE CORE COMPONENTS OF AI

Certain components are peculiar to AI; these are what make for the functionality of the project. They are:

i. **Learning:** AI systems improve their performance through what is referred to as machine learning, the branch of AI that is focused on developing algorithms and systems that enable machines to learn from data to improve their performance over time. The process of learning begins with training, where certain programming in the computer analyzes historical data to learn patterns. Once trained in this scope, the model created can then be able to make predictions or take corresponding decisions on both new and unseen data. Pedro Domingos, in his work *The Master Algorithm*, quoting Andrew Ng, states that “machine learning is the science of getting computers to act without being explicitly programmed.”¹⁰ It is based on this that machine learning can be classified into the following:

- **Supervised Learning:** This is when the algorithm learns from labeled data, where the correct output is provided for each input.¹¹ This kind of learning is commonly used for operations like the classification of images into categories or the detection of objects within images and videos.
- **Unsupervised Learning:** In this style of learning, the algorithm analyzes unlabeled data to find hidden patterns or groupings, such as customer segmentation or anomaly detection. Put differently, Goodfellow (et al.) states that “in unsupervised learning, the machine tries to learn the underlying structure of the data without any supervision—that is, without access to labels.”¹²
- **Reinforcement Learning:** Learning in this scope is done by interacting with the environment and receiving feedback in the form of rewards or penalties. Richard S. Sutton and Andrew G. Barto describe reinforcement learning as “learning what to do, how to map situations to actions so as to maximize a numerical reward signal.”¹³ This mode of learning is commonly used in areas of robotics and gaming.

ii. **Reasoning:** This is the ability of artificial intelligence to make certain decisions, infer conclusions from a given pattern, and plan certain actions. This mimics the human ability of reasoning. Alan Turing's position becomes apt in this regard when he noted in his popular *Turing test*, which is a way to ascertain if a machine could exhibit intelligence similar to that of a human person. This test laid the intellectual foundation for AI, arguing that machines could be programmed to simulate human reasoning.¹⁴

iii. **Perception:** This is the ability of AI systems to process inputs like images, sounds, or sensor data to make sense of the world.

iv. **Language Processing:** AI is made with algorithms that process human languages. In this scope, computers are enabled to understand, interpret, generate, and respond to human language in both written and spoken forms. This is to aid clear communication between the machines and humans.

v. **Autonomy and Adaptability:** This is the situation whereby AI systems can be left to operate on their own, and are programmed to adapt to changing inputs.

c. TYPES OF AI

¹⁰ Pedro Domingos, *The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World* (New York: Basic Books, 2015), 8.

¹¹ Ian Goodfellow, Yoshua Bengio, and Aaron Courville, *Deep Learning* (Cambridge, MA: MIT Press, 2016), 5.

¹² Goodfellow, et. al., *Deep Learning*, 6.

¹³ Richard S. Sutton and Andrew G. Barto, *Reinforcement Learning: An Introduction*, 2nd ed. (Cambridge, MA: MIT Press, 2018), 1.

¹⁴ Alan Mathison Turing, “Computing Machinery and Intelligence,” *Mind* 59, no. 236 (1950): 433–460.

The types of AI are typically linked to their technological evolution over time. This pays attention to how AI grew from a simple to a sophisticated system. The types and classification of AI were borne out of the research done by scholars in the field of computer science.¹⁵ Some of these researchers are John Searle, who discussed the distinction between weak and strong AI; Nick Bostrom, whose work on superintelligence probes the potential risk and ethical views of advanced AI systems; and Stuart Russell and Peter Norvig, who in their work titled *Artificial Intelligence: A Modern Approach* gave various types and aspects of AI.¹⁶

However, the following are the types of AI we shall be discussing briefly: narrow AI, general or strong AI, Superintelligence AI, and Artificial General Intelligence (AGI).

- i. **Narrow AI (Weak AI):** These are AI systems that do not possess true understanding or absolute consciousness but are designed for specific tasks, such as voice assistants, image recognition, and recommendation algorithms.
- ii. **General or Strong AI:** These are considered theoretical AI with the ability to understand, learn, and apply intelligence across a broad range of tasks, like a human person. For instance, reasoning, learning, and adapting.
- iii. **Superintelligence:** This is also a theoretical form of AI that exceeds human intelligence in all respects, which is often associated with future speculation and ethical debate.
- iv. **Artificial General Intelligence (AGI):** As evident in the name, AGI is a special kind of advanced AI that can generalize by performing any intellectual task that a human can do, adapt to new situations, and transfer knowledge between domains. It is argued hypothetically to transcend human intelligence, wherein humans will depend on it, and be able to operate independently without explicit instruction on every step.¹⁷

d. WHAT DOES IT MEAN TO BE AFRICAN?

Describing what “African” entails has been a problematic issue, most especially in the scope of philosophy. This is due to some of the following factors: how many scholars see the African people, their colonial origin, the misinterpretations as a result of the colonial influence, and the challenges in defining the African philosophy and identity.¹⁸ Thus, several scholars have given their positions on the meaning of the word “African.”

Ngũgĩ wa Thiong’o noted that “to be African is to reject the alienation that came with colonialism and to reconnect with the cultural, historical, and linguistic heritage of the continent.”¹⁹ Ali A. Mazrui, a Kenyan political scientist, describes an African to mean “someone whose cultural genesis lies in the continent, whether by birth, ancestry, or prolonged socialization.”²⁰ Also, Kwame Gyekye, a prominent Ghanaian philosopher, gave a more pragmatic definition when he noted that “to be African is to possess an identity formed through the values and communal worldview of African societies.”²¹

¹⁵ Max Tegmark, *Life 3.0: Being Human in the Age of Artificial Intelligence* (New York: Alfred A. Knopf, 2017), 32–35.

¹⁶ Bostrom, *Superintelligence*, 22–25.

¹⁷ Legg, Shane, and Marcus Hutter. “Universal Intelligence: A Definition of Machine Intelligence.” *Minds and Machines* 17, no. 4 (2007): 391–444.

¹⁸ Ngũgĩ wa Thiong’o, *Decolonising the Mind: The Politics of Language in African Literature* (London: James Currey, 1986), 4–7.

¹⁹ Ngũgĩ wa Thiong’o, *Decolonising the Mind: The Politics of Language in African Literature*, 4; Ngũgĩ wa Thiong’o, *Something Torn and New: An African Renaissance* (New York: Basic Civitas, 2009), 4.

²⁰ Ali A. Mazrui, *The Africans: A Triple Heritage* (Boston: Little, Brown and Company, 1986), 10.

²¹ Kwame Gyekye, *African Cultural Values: An Introduction* (Philadelphia: Sankofa Publishing Company, 1996), 18–20.

Nonetheless, we can infer from the definitions above that to be “African” entails the following: a geographical, cultural, and historical identity and a robust philosophical experience rooted in the diverse peoples, values, and traditions of the African continent.²² It incorporates a sense of belonging, resilience, and connection to a shared heritage shaped by history, language, communal living, land, and worldview.

2. BRIEF HISTORICAL TRAJECTORY OF AI IN AFRICA

The history of AI in Africa is characterized by an integral integration of indigenous innovations, traditions, cultures, international partnerships, and a growing focus on using AI to address issues affecting the African people.

In the early 1900’s before the advent of the digital era, Africa’s scientific and technological institutions were underdeveloped due to colonialism. AI as we know it today was not developed at this time. However, African societies had indigenous knowledge systems and logic-based reasoning in every facet of life, including agriculture, health, and governance. This is evident in instances like oral decision-making and the diagnosis of ailments using a holistic approach, rooted in indigenous knowledge, spiritual belief systems, environmental observation, and various experiences in the community.²³

However, Africa’s involvement in software technology and computer science began around the 1970s, with International Business Machines Corporation (IBM) collaborating with African engineers. Many African inventors and engineers at this time acknowledged the impact of the internet. Although at this point, AI was largely absent, the focus at this point was primarily on digital literacy, basic computing, and ICT for development. To that effect, many African universities and institutions started adding computer science to their syllabus, but still with no specialization in AI. For example, the University of Lagos (Nigeria) began teaching programming and information systems in the early 1970s; also, Makerere University (Uganda) and the University of Nairobi (Kenya) introduced early computer science modules in partnership with IBM and other international agencies. More so, in countries like Ghana, Kenya, Nigeria, and South Africa, IBM promoted and supplied early mainframe machines (IBM 1401, 360 series) to universities for administrative and educational purposes, to banks, and government bodies to make their work effective. IBM worked with African engineers to install and maintain these systems and to train local staff. Also, they pioneered software localization, such as adapting payroll and census applications to African administrative needs.²⁴

It was around the year 2005 that the discourse on AI became pronounced. It was adopted in a few institutions like the University of Cape Town (South Africa) and the African Institute for Mathematical Sciences (AIMS), which focus on Natural Language Processing (NLP), computer vision, and decision-making tools. Companies started adopting AI systems to solve pressing local problems. Some of these companies are Tambua Health and Agrix Tech. More so, Aisha Walcott led IBM’s efforts in Kenya from

²² Achille Mbembe, *On the Postcolony* (Berkeley: University of California Press, 2001), 1–12; Souleymane Bachir Diagne, *Open to Reason: Muslim Philosophers in Conversation with the Western Tradition* (New York: Columbia University Press, 2018), 15–18.

²³ Lily N. A. Kpobi and Leslie Swartz, “‘The Threads in His Mind Have Torn’: Conceptualization and Treatment of Mental Disorders by Neo-Prophetic Christian Healers in Accra, Ghana,” *International Journal of Mental Health Systems* 12 (2018): 5–7.

²⁴ Emmanuel Adebayo, “Deep Dive: Nigeria’s Technical Talent Landscape—From 1963 to 2018,” *TechCabal*, July 14, 2020. <https://techcabal.com/2020/07/14/deep-dive-nigerias-technical-talent-landscape-from-1963-to-2018/>; Abena Osseo-Asare, *Atomic Junction: Nuclear Power in Africa after Independence* (Cambridge: Cambridge University Press, 2019), 112–119.

2013, employing the deep learning model to improve Nairobi's traffic systems, and as a result, about 10% reduction was recorded in commuters' time.²⁵

Between 2014 and 2018, there was an immense growth in the African AI ecosystem. Many AI companies were established to this effect. For instance, the company, Instadeep, among others, which was founded in Tunisia by Karim Beguir and Zohra Slim, became one of the first African AI companies to publish research at major international conferences in collaboration with other tech groups, including BioNTech, AI Hack Tunisia, and Deepmind. Also, at this period in history, many AI tools were adopted in almost every area of life to make work easier. These tools include e-learning platforms, data analytics, chatbots, decision support, and diagnostic systems.

From 2021 to date, organizations were established by African authorities to help regulate the ethical issues that border on the use of AI. For example, Rwanda and Kenya began drafting national AI strategies, and the African Union initiated work on AI governing frameworks. Policies were put in place to foster inclusion and collaboration among African universities, international AI labs, and governments. Also, it is not out of place to note that research is still ongoing, directed towards the production of more sophisticated machines and AI models to simulate human intelligence towards the preservation and promotion of the African people and culture within and outside the confines of Africa.

THE AFRICAN WORLDVIEW AND AI

By African worldview, we mean the underlying principles of the African people about the origin, nature, structure, organization, and interaction of humans and the entirety of existence.²⁶ It emphasizes the fundamental questions that revolve around the relationship between the people and the universe. It also talks about the uniqueness of the African people or culture.²⁷

Hence, the African worldview is characterized by communalism, where the individual is not seen as separate from the community. The well-being of the people is achieved through interdependence, shared identity, and collective responsibility. The words of Desmond Tutu become apt here when he noted that "a person is a person through other persons."²⁸ This position places ample emphasis on ethical living, which involves empathy, solidarity, and respect for communal bonds.

a. The Concept of Ubuntu: A Case Study

The word *Ubuntu* is a derivative of the Nguni Bantu languages of Southern Africa, specifically Zulu and Xhosa. This word, though simple, carries profound linguistic and philosophical significance.²⁹ It is a philosophical *cum* sociological concept that encapsulates the essence of humanity and communalism. The term is often translated to mean *I am because we are*, emphasizing integral connections between individuals within a given community.³⁰

The Ubuntu philosophy is deeply rooted in the African culture and identity, and it forms the basis for how the African people view and interpret reality and their everyday experiences. It recognizes that a person's identity and well-being are inextricably linked to the well-being of their community, fostering

²⁵ Benjamin Milingo and Moustapha Cissé, "Artificial Intelligence in Africa: Challenges and Opportunities," in *Artificial Intelligence for Sustainable Development*, ed. Jean-Claude Burgelman et al. (Cham: Springer, 2021), 123–142.

²⁶ David K. Naugle, *Worldview: The History of a Concept* (Grand Rapids, MI: Eerdmans, 2002), 1-5.

²⁷ Diederik Aerts, Leo Apostel, Bart De Moor, and others, *Worldviews: From Fragmentation to Integration* (Brussels: Vrije Universiteit Brussel Press, 1994), 45-55.

²⁸ Desmond Tutu, *No Future Without Forgiveness* (New York: Doubleday, 1999), 35.

²⁹ Gade, Christian, "What is Ubuntu? Different Interpretations among South Africans of African Descent" 1. *South African Journal of Philosophy*, (2013):31. <https://doi.org/10.1080/02580136.2012.10751789>.

³⁰ Ewuoso, Cornelius & Hall, S. "Core Aspects of Ubuntu: A Systematic Review", *South African Journal of Bioethics and Law*. (2019):12. 93.

the practice of justice, which is directed towards the promotion of healing rather than punishment.³¹ More so, within this purview, knowledge is preserved and transmitted through oral tradition: proverbs, storytelling, songs, and rituals; thus, making wisdom communal and situational, not just written or scientific.

Many African scholars who are strong proponents of this philosophy gave their thought-provoking inputs using different concepts in support of this worldview. This made *Ubuntu* and other related worldviews gain more popularity even in our present times. Some of these scholars are Edward Blyden, Placid Temples, John Mbiti, Jomo Kenyatta, Julius Nyerere, Kwame Nkrumah, and Bolaji Idowu.³²

Other related concepts used by the African people, which have similar connotations to Ubuntu, are:

- *Ujamaa*: It emphasizes the importance of family and community living in African societies.
- *Nzuri*: which translates to mean *beauty*, it refers to the aesthetic and moral values that guide human behavior and relationships.
- *Unmuntu Ngumuntu Ngabantu*: it translates to means “a person is a person because of other people,” highlighting the importance of relationship and communion in defining the identity of the human person.

b. The Interplay Between the African Worldview and AI

In our society today, the African worldview informs different ethical AI, whereby systems are put in place to preserve and promote the core values of the African people, especially in the scope of indigenous languages, which are considered repositories of cultures and worldviews. Some of these AI tools include the following:

i. Masakhane NLP: This tool was created by Jade Abbot and Laura Martinus from South Africa. It was launched in 2019. This tool is a natural language processing tool for African languages. It promotes linguistic inclusion and builds locally trained models. It translates between English and several African languages (e.g., Igbo, Yoruba, Swahili, isiZulu).

ii. Vula Mobile: This AI tool originates from South Africa and functions as a mobile app for healthcare workers to refer patients and get specialist advice.

iii. Ubenwa: This AI system was founded by Charles C. Onu (Nigeria), an AI researcher and biomedical engineer. It was launched in 2017. It uses AI to analyze newborn cries to detect medical problems that may arise during birth, such as respiratory disease, organ damage, and loss of consciousness. This system adopts machine learning and audio signal processing in its operation.³³

v. SunCulture: This AI system, which originated from Kenya, was founded by Samir Ibrahim and Charles Nichols. It was created for the agricultural sector, whereby AI systems are used for irrigation by small farmers who are situated in arid environments to improve agricultural productivity.

3. CHALLENGES OF AI FROM AN AFRICAN PERSPECTIVE

Despite the fascinating and positive impact of the adoption and use of AI in Africa, it should not be ruled out that AI in several ways poses some problems to the African people and their legacy. And also, some factors affect the use of AI from the African perspective. These are seen in the following points:

a) Superficiality in data

³¹ Tutu, *No Future Without Forgiveness*, 31-34.

³² Olusegun Oladipo (ed.) *Core Issues in African Philosophy*, (Ibadan: Hope Publications, 2006), 108.

³³ Charles C. Onu et al., “Ubenwa: Cry-based Diagnosis of Birth Asphyxia,” *arXiv*, November 17, 2017, <https://arxiv.org/abs/1711.08458>.

In this periscope, the data processed by the AI systems is most time not in-depth. This is because the data used in programming the AI is limited in scope, which affects the productivity of the entire system, leading to poor AI performance in African contexts.³⁴ For instance, some AI translators struggle with processing African languages due to insufficient training data.

b) Infrastructural limitations

Using Nigeria as a case study, many factors combat the adoption and use of AI; some of these are inconsistent electricity, low internet penetration, and high computing costs.³⁵ Moreover, there is limited AI research and training among the interested citizens, as well as a shortage of advanced AI proficiency and limited access to quality AI education. All of these pose challenges to AI from the African perspective.

c) Cultural marginalization

The majority of these AI tools are programmed using the Western influence. The algorithm used tends to support the Western influence, leading to biases, misinterpretation of African traditions, and worldviews. For instance, in 2015, Google Photos faced widespread criticism after its image recognition algorithm mislabeled a Black couple as “gorillas.” This was probably due to misinformation, or the algorithm used in the machine learning lacked racial diversity, which critics argued contributed to the misinterpretation of the data.³⁶

This also raises the issue of putting our trust in these AI systems. If the productivity of the system often leads to biases and misinformation, it becomes difficult for me to trust such an innovation. In 2023, during the U.S. Senate hearing, one of the most prominent AI founders, Sam Altman, the CEO of OpenAI, warned against trusting the AI models without human oversight. In his words, he states, “We think that people should be warned that AI systems can make mistakes... they can hallucinate. Users should not rely on them for factual correctness without checking.”³⁷ In the same vein, Elon Musk (co-founder of OpenAI, CEO of xAI), on October 24, 2014, during a public address at the MIT Aeronautics and Astronautics Centennial Symposium, warns users about the adoption of AI models without regulation. He avers that “with artificial intelligence we are summoning the demon... I think we should be very careful.”³⁸ It is on this note that AI models should be created to align with human values, and they must be used under strict regulation and supervision.

d) Ethical and societal concerns

Most of the AI tools that are imported and used in Africa may not accommodate the core African values.³⁹ This is because most of the AI models are built with algorithms having specific ethical considerations that are applied to a given people, language, and culture. As such, imported AI tools may ignore core African values (e.g., communal ethics, respect for elders, and sacredness of human life and identity), leading to complications and misinterpretation of the African identity.

³⁴ Shakir Mohamed, Marie-Therese Png, and William Isaac, “Decolonial AI: Decolonial Theory as Sociotechnical Foresight in Artificial Intelligence,” *Philosophy & Technology* 33, no. 4 (2020): 659–684.

³⁵ Alexander Supanich, Vukosi Marivate, and Fatima B. Zahra, “Artificial Intelligence in Global Health: An Unfair Future for Health in Sub-Saharan Africa?” *AI and Ethics* 6, no. 2 (2024): 6. <https://doi.org/10.1007/s43681-023-00359-3>.

³⁶ Conor Dougherty, “Google Photos Mistakenly Labels Black People ‘Gorillas,’” *The New York Times*, July 1, 2015, <https://archive.nytimes.com/bits.blogs.nytimes.com/2015/07/01/google-photos-mistakenly-labels-black-people-gorillas/>.

³⁷ Sam Altman, testimony before the U.S. Senate Judiciary Subcommittee on Privacy, Technology, and the Law, May 16, 2023. <https://www.judiciary.senate.gov>.

³⁸ Elon Musk. Keynote address at the MIT Aeronautics and Astronautics Centennial Symposium, Cambridge, MA, October 24, 2014. *AeroAstro Turns 100*. MIT News. Accessed July 5, 2025. <https://news.mit.edu/2014/aeroastro-centennial-symposium-1025..>

³⁹ Timnit Gebru, “Race and Gender in AI,” *Communications of the ACM* 64, no. 3 (2021): 18–20.

Sequel to the above, scholars have advocated for the adoption of various ethical frameworks in the use of these AI models. Some of these ethical frameworks include the following:

1. Deontological Ethics (Kantian Ethics):

This ethical framework postulates that actions are morally right if they follow a set of duties or rules, regardless of outcomes. Thus, actions must follow moral duties and treat humans as ends in themselves, never as mere means. This will help in the preservation of the dignity as well as the interests of the person. As such, AI systems should never violate fundamental human rights.

Developers, on the other hand, should respect principles such as transparency, fairness, and autonomy in the building of the algorithms that will help in the operations of the AI models. For example, facial recognition systems should not be used for mass surveillance that invades privacy, even if it improves the security measures of a given community. It is on this note that William D'Alessandro argues that deontological morality offers a promising route for moral alignment in AI due to its principles and technical structure. Although he cautions that deontology alone may not guarantee safety in AI systems.⁴⁰ Nonetheless, integrating the principles of deontology into the ambit of AI helps to balance outcomes and the procedures in decision-making.

2. Utilitarianism:

This ethical theory avers that actions are right if they maximize overall happiness or well-being.⁴¹ As such, decisions about AI creation and deployment should weigh the benefits and harms to all stakeholders. For example, an AI healthcare tool should be deployed if it improves outcomes for most patients. Also, in the scope of the African core values, AI should be deployed if it helps to promote the authentic and holistic African worldviews.

3. Virtue Ethics:

This ethical framework focuses on character development and moral virtues rather than on rules or consequences. It posits that ethical behavior stems from the character and virtues of individuals (e.g., honesty, justice, compassion).⁴² Thus, developers, organizations, and policymakers should cultivate virtues like responsibility, integrity, and humility in the creation and deployment of AI systems. For instance, companies should be transparent about AI limitations instead of overstating capabilities in the bid to sell products for financial interests.

Nonetheless, inasmuch as these ethical theories in their structures and operations help to regulate the use of these AI models, it does not in any way render them absolute in their scope of operation. It is premised on this that the paper advocates for the combination of two or more ethical theories to fill in what is missing in the other, so as to help AI align with human values and to exhibit a more balanced framework with ample consideration for African core values.

4. EVALUATION

The use of AI in relation to African ethics and philosophy cannot be taken for granted. This is owed to the fact that there is a great increase in the productivity of the African economy; many of the African traditions are preserved, and the younger generations, through the instrumentality of AI models, now have robust access to the rich heritage of the African language, people, and culture.

⁴⁰ William D'Alessandro, "Deontology and Safe Artificial Intelligence," *Philosophical Studies*, June 13, 2024, <https://doi.org/10.1007/s11098-024-02174-y>.

⁴¹ John Stuart Mill, *Utilitarianism*, ed. George Sher (Indianapolis: Hackett Publishing Company, 1979), 10.

⁴² Nancy E. Snow, *Contemporary Virtue Ethics* (Cambridge: Cambridge University Press, 2020), 45, <https://doi.org/10.1017/9781108580496>.

More so, the number of AI startups in Africa has increased by over 70% since 2019, indicating a significant rise in entrepreneurial activity within the AI sector. For instance, in 2023, the number of AI professionals in Africa grew by 40%, reaching over 5,000 experts.⁴³ This reflects a concerted effort to build human capital in AI across Africa. This growth in the interest of the African people has greatly influenced collaborations from big tech companies. For example, on the 6th of March 2025, Microsoft announced its plans to invest an additional \$296.81 million in AI infrastructure in South Africa, aiming to boost its AI capabilities.⁴⁴ Also, Microsoft, in collaboration with UAE-based AI firm G42, plans to invest \$1 billion to build a data center in Kenya in a bid to expand cloud-computing services in East Africa.⁴⁵

However, in all of these advancements in the scope of AI, agencies such as the African Union High-Level Panel on Emerging Technologies (APET), Data Science Nigeria (DSN), and AI4D Africa (Artificial Intelligence for Development in Africa), among others, which are put in place to evaluate the ethical issues that may arise as a result of the use of AI, should try as much as possible to advocate for AI models that are directed towards valuing African voices, priorities, and philosophy. Lastly, their proposals for AI ethics should be based on African moral principles and frameworks. On this note, Timnit Gebru, founder of the *Distributed AI Research Institute (DAIR)* and a former co-lead of Google's Ethical AI team, advocates for contextual, decolonial, and community-centered AI. To buttress this position, he stated that "AI development must reflect the people it serves, not impose systems on them."⁴⁶ Other proponents who support this claim are Rediet Abebe, Karim Beguir, and Wilhelmina Nekoto. They argue that AI should be co-designed with African communities, integrating local challenges and indigenous knowledge systems.⁴⁷ Thus, AI can solve African problems only when it is home-grown and informed by local data and ethics.

Furthermore, in the scope of machine consciousness, can we say that machines in Africa can exhibit such intelligence as being conscious? And does such intelligence reflect African ethical values? This raises a serious concern, a topic that has been debated among scholars. In any case, for a machine to be considered "conscious" or "a person" in the African sense, it would need to participate meaningfully in communal life and relationships, show moral agency or responsibility, be seen as part of the social and spiritual order, and not just exhibit intelligent behavior. It is on this note that Dokpesi Timothy Adidi, while interrogating Igwebuike's philosophy, suggests that "the value and identity of any entity, including AI, are defined by its integration into the community and its contribution to collective well-being."⁴⁸ Thus, we Africans might resist calling any machine "conscious" unless it demonstrates interpersonal and moral behavior, and not just computational complexity.⁴⁹ Therefore, since no machine has been able to demonstrate moral agency or relational spirituality, then the notion of machine consciousness is not

⁴³ Centre for Intellectual Property and Infortutation Technology Law (CIPIT), *The State of AI in Africa Report 2023*, June 2023, accessed July 5, 2025, <https://cipit.org/wp-content/uploads/2023/06/Final-Report-The-State-of-AI-in-Africa-Report-2023.pdf>.

⁴⁴ "Microsoft to Invest Additional 54 Billion Rand in South Africa AI Infrastructure," *Reuters*, accessed May 9, 2025, <https://www.reuters.com/technology/artificial-intelligence/microsoft-invest-additional-54-billion-rand-south-africa-ai-infrastructure-2025-03-06>

⁴⁵ "GSMA Report Highlights AI's Potential for Africa's Growth," *Capacity Media*, accessed May 9, 2025 <https://www.capacitymedia.com/article/2di4plxkimu28xxf8bawx/news/gsma-report-highlights-ais-potential-for-africas-growth>.

⁴⁶ Timnit Gebru, "Race and Gender in AI," *Communications of the ACM* 64, no. 3 (2021):20.

⁴⁷ Rediet Abebe, "Participatory Approaches to Algorithmic Fairness," *Nature Machine Intelligence* 3, no. 12 (2021): 1043–1045, <https://doi.org/10.1038/s42256-021-00451-9>; Karim Beguir, interview by *MIT Technology Review*, "How InstaDeep Is Building Africa's AI Future," March 12, 2023, <https://www.technologyreview.com/2023/03/12/instadeep-africa-ai-karim-beguir>.

⁴⁸ Dokpesi Timothy Adidi, "Igwebuike Philosophy and Artificial Intelligence (AI): An African Response," *Journal of African Studies and Sustainable Development* 6, no. 2 (2023): 41–42.

⁴⁹ Abeba Birhane and V. Guest, "Towards Decolonising Computational Sciences," *Patterns* 2, no. 10 (2021): 1–5. <https://doi.org/10.1016/j.patter.2021.10039>.

possible within the African scope. AI thereby remains on the identity of being a tool, not a person, regardless of how intelligent it appears.

CONCLUSION

This paper has attempted to give a robust understanding of the concept of AI and the historical trajectory of the inclusion of AI within the African scope. It postulates that while AI technologies often originate from Western paradigms, they should not be seen as the extension of their worldviews. Thus, it argues for the indigenization of the AI models so as to help solve African pressing needs and promote the African ideology.

This paper has also shown that AI has the potential to serve as a transformative tool for development, cultural preservation, and inclusive innovation when properly aligned with African worldviews. Furthermore, it acknowledges the ethical challenges and limitations we face in the use of AI, which include data bias, infrastructural disparities, and cultural marginalization. Thus, it strongly advocates for the adoption of some ethical theories, such as deontology, virtue ethics, and utilitarianism, which will help in aligning the AI models with human interests.

Lastly, this study establishes the fact that the approach to AI through an African lens is not about adopting and applying Western innovations in their raw form. It is about refining, domesticating, valuing, and projecting those innovations to serve and promote the African philosophy. Hence, with the right investment in people, policies, and infrastructure from selfless and responsible leaders, Africa can become a leading continent in ethical, inclusive, and transformative AI innovation.

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BIBLIOGRAPHY

- Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Oxford: Oxford University Press, 2014.
- Crawford, Kate. *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence*. New Haven: Yale University Press, 2021.
- Dougherty, Conor. "Google Photos Mistakenly Labels Black People 'Gorillas.'" *The New York Times*, July 1, 2015. <https://archive.nytimes.com/bits.blogs.nytimes.com/2015/07/01/google-photos-mistakenly-labels-black-people-gorillas/>. Accessed July 15, 2025.
- Geburu, Timnit. "Race and Gender in AI." *Communications of the ACM* 64, no. 3 (2021): 18–20.
- Good, Irving John. "Speculations Concerning the First Ultrainelligent Machine," *Advances in Computers* 6 (1965): 31–88.
- Goodfellow, Ian, Yoshua Bengio, and Aaron Courville. *Deep Learning*. Cambridge, MA: MIT Press, 2016.
- Grancia, Kalule. "Decolonizing AI Ethics in Africa's Healthcare: An Ethical Perspective." *AI and Ethics* 5, no. 3 (2025): 233–251. <https://doi.org/10.1007/s43681-024-00650-z>.
- _____. "Ethics of AI in Africa: Interrogating the Role of Ubuntu and AI Governance Initiatives." *Ethics and Information Technology* 27, no. 2 (2025): 145–162. <https://doi.org/10.1007/s10676-025-09834-5>.

- Gyekye, Kwame. *African Cultural Values: An Introduction*. Philadelphia: Sankofa Publishing Company, 1996.
- Kpobi, Lily N. A., and Leslie Swartz. “‘The Threads in His Mind Have Torn’: Conceptualization and Treatment of Mental Disorders by Neo-Prophetic Christian Healers in Accra, Ghana.” *International Journal of Mental Health Systems* 12 (2018): 1–1.
- Legg, Shane, and Marcus Hutter. “Universal Intelligence: A Definition of Machine Intelligence.” *Minds and Machines* 17, no. 4 (2007): 391–444.
- Mazrui, Ali A. *The Africans: A Triple Heritage*. Boston: Little, Brown and Company, 1986.
- Mbembe, Achille. *On the Postcolony*. Berkeley: University of California Press, 2001.
- McCarthy, John. “Proposal for the Dartmouth Summer Research Project on Artificial Intelligence.” 1956. <http://jmc.stanford.edu/articles/dartmouth/dartmouth.pdf>. Accessed May 6, 2025.
- Mill, John Stuart. *Utilitarianism*. Edited by George Sher. Indianapolis: Hackett Publishing Company, 1979.
- Nekoto, Wilhelmina, et al. “Participatory Research for Low-Resourced Machine Translation: A Case Study in African Languages.” *Findings of the Association for Computational Linguistics: EMNLP* (2020): 2144–2160. <https://aclanthology.org/2020.findings-emnlp.195/>.
- Pasquale, Frank. *New Laws of Robotics: Defending Human Expertise in the Age of AI*. Cambridge, MA: Harvard University Press, 2020.
- Rich, Elaine. *Artificial Intelligence*. New York: McGraw-Hill, 1983.
- Russell, Stuart, and Peter Norvig. *Artificial Intelligence: A Modern Approach*. 3rd ed. Upper Saddle River, NJ: Prentice Hall, 2010.
- Snow, Nancy E. *Contemporary Virtue Ethics*. Cambridge: Cambridge University Press, 2020. <https://doi.org/10.1017/9781108580496>.
- Sutton, Richard S., and Andrew G. Barto. *Reinforcement Learning: An Introduction*. 2nd ed. Cambridge, MA: MIT Press, 2018.
- Tegmark, Max. *Life 3.0: Being Human in the Age of Artificial Intelligence*. New York: Alfred A. Knopf, 2017.
- Thiong'o, Ngũgĩ wa. *Decolonising the Mind: The Politics of Language in African Literature*. London: James Currey, 1986.
- Tutu, Desmond. *No Future Without Forgiveness*. New York: Doubleday, 1999.
- Winston, Patrick Henry. *Artificial Intelligence*. 3rd ed. Reading, MA: Addison-Wesley, 1992.