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A New Dawn: Embracing Ethical Adoption And Adaptation Of Artificial Intelligence (AI) In Africa



This is the 21st blog post in a blog series to be published in 2023 by the APET Secretariat on behalf of the AU High-Level Panel on Emerging Technologies (APET)

The onset of the 4th Industrial Revolution (4IR) is releasing a wave of technological advancements poised to reshape the trajectory of African progress. At the forefront of this transformative era is artificial intelligence (AI), a catalyst with the capacity to revolutionise multiple sectors and drive inclusive expansion. AI has seamlessly integrated into numerous aspects of daily life, spanning commerce, education, health, public services, communications, governance, agriculture, and manufacturing, highlighting its pervasive impact. Furthermore, the transformative potential of AI is poised to reshape business operations, spur innovation, and uplift millions of lives across the African continent, aligning with the collective aspirations of the African Union's Agenda 2063. By catalysing swift economic progress, expanding healthcare and education access, and promoting sustainable agriculture, AI emerges as a pivotal tool in addressing the continent's critical issues.[1]

Africa's journey towards embracing AI is marked by gradual advancements. In 2021, the Centre for Intellectual Property and Information Technology Law (CIPIT) at Kenya's Strathmore Law School pinpointed a total of 213 AI applications tailored for or originated within the continent, spanning 33 diverse industries. Particularly, these applications predominantly found utility in domains such as corporate services,[2] health, agriculture, business intelligence, and education. Among the prevalent applications, data analytics, chatbots, and decision support systems emerged as the most frequent implementations.[3]

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AI technology is finding practical application in South Africa's healthcare domain for rapid HIV testing. In Uganda, AI is harnessed to analyse prospective road network adjustments aimed at eliminating congestion points, strategically reallocating a limited pool of traffic enforcers, and offering optimal routing guidance to individuals and emergency vehicles. Demonstrating another facet, the World Wildlife Fund for Nature (WWF) is advocating for the integration of AI-equipped drones in Kenya. This fusion of AI and drone technology led to the apprehension of over a dozen wildlife poachers in Maasai Mara within a span of nine months.[4]

Despite its promising potential, AI presents significant challenges for African governments, authorities, and organisations, particularly in the realm of ethics. AI-driven technologies can amplify the effectiveness of hacking, digital surveillance, monitoring, and malicious software[5]. This raises concerns about authoritarian regimes exploiting AI for their agendas, for instance targeting political rivals, and perpetuating biases.[6] A major concern is the absence of a comprehensive AI strategy in Africa to guide ethical AI use. This missing guideline has created a significant gap in establishing standards across the continent. Additionally, most of the funding and research in AI applications originate from external sources, often diverting priorities away from African experts who are well-versed in local norms.

In collaboration with AI experts from across African Union (AU) Member States, the African Union High-Level Panel on Emerging Technologies (APET) is formulating an African Union – Artificial Intelligence Continental Strategy for Africa. To this end, APET has convened multiple consultative meetings with AI experts since 2021 to shape this continental strategy. In this strategy, APET underscores the importance of establishing ethical and legal frameworks to harness AI's potential while mitigating risks and emphasising responsible data use.

In addition to various other considerations, the AU-AI Continental Strategy encompasses promoting ethical AI practices, establishing consistent legal principles, and embracing pertinent treaties and guidelines. To achieve this, AU Member States are encouraged to establish regulatory bodies overseeing AI creation and usage, implement codes of ethics for AI stakeholders, and collaborate to create a pan-African AI legislative framework. Harmonising AI legislation, defining guiding principles, and facilitating practical implementation are pivotal steps toward a unified and effective approach to AI development and utilisation in Africa. This framework anticipates potential AI risks, facilitates the development of proactive safeguards, and establishes a robust strategy for fostering sustainable AI solutions across the continent.

APET recognises that both formal and non-formal education has an important role to play in democratising technology and cultivating AI ethics in African countries. APET advocates for the incorporation of African ethical principles through education. To this end it is imperative to integrate a more comprehensive and structured AI ethics into educational curricula. This would contribute to enlightening future AI practitioners and stakeholders about AI's impacts and risks. African values and context-based thinking could underpin an ethical framework for AI across the continent and facilitate its adoption and advancement. The ethical underpinning of AI should primarily draw from African values, prioritising the needs of marginalised communities.

African AI researchers and innovators have a crucial role to play in shaping ethical AI practices on the continent. One significant contribution is the development of tailored ethical AI frameworks that consider Africa's distinct challenges and strengths, encompassing its youthful population, diverse cultures, and resource constraints. By researching the societal impact of AI, these reports can identify both positive and negative outcomes, enabling the formulation of strategies to mitigate potential risks. Advocacy efforts led by these experts drive the establishment of ethical AI policies at national and continental levels, thereby, safeguarding the interests of all Africans.[7] Furthermore, African AI researchers and innovators are actively building capacity in ethical AI by educating academics, policymakers, and the public. They participate in international AI conferences, thereby facilitating knowledge exchange and networking with global peers. Their research publications spotlight ethical concerns, enhancing awareness and knowledge in this domain. The creation of educational resources empowers Africans to engage in the development of ethical AI frameworks and policy shaping.

A case in point is Dr Claudia Aranda, whose impactful contributions extend to co-founding the African AI Ethics Alliance, a collective of African AI researchers and innovators dedicated to advancing ethical AI practices across the continent. This alliance has not only raised awareness of AI's ethical dimensions in Africa but has also established a set of context-specific ethical AI principles. These principles guide AI development and utilisation

among African governments, businesses, and civil society organisations.[8] Similarly, Dr Ahmed Elgammal co-founded the Responsible AI Initiative, an instrumental programme propelling ethical AI in Egypt. This initiative equips Egyptian enterprises with tools and resources to foster ethical AI systems and imparts ethical AI training to numerous Egyptian professionals. Additionally, Dr Noopur Raval's endeavours of co-founding the AI for Social Good Africa Initiative are making waves. This initiative employs AI to tackle pressing societal issues in Africa, generating AI-powered solutions to enhance education, healthcare, and agriculture. It also conducts training sessions for African AI experts in leveraging AI for societal betterment.[9]

Remarkably, the collaborative endeavours of these African AI visionaries amplify AI's positive influence throughout Africa in addressing pressing challenges, and carving out innovative pathways, thus solidifying the potential for Africa's leadership in the ethical development and application of AI.[10] In the realm of education, AI's personalised learning, automated grading, and targeted feedback mechanisms are transforming educational experiences for many people in Africa.[11] Within healthcare, AI contributes to disease diagnosis, offers medical insights, and fuels research, significantly elevating healthcare standards. Agricultural practices have witnessed a leap forward as AI optimises crop yields, forecasts weather patterns, and effectively identifies pests and diseases. Financial domains benefit from AI's prowess, facilitating credit scoring, fraud detection, and providing invaluable investment guidance. Government services are also experiencing a notable overhaul through AI-enabled e-government provisions, anti-corruption measures, and well-informed policymaking, and bolstering governance.

In conclusion, APET recognises that these initiatives discussed above underscore the commitment of African AI researchers and innovators in advancing ethical AI principles throughout the continent. Their collective efforts not only ensure a positive influence of AI on Africa's progress but also has the potential of moving the continent forward as a pioneering force in ethical AI practices. Consequently, embracing responsible and ethical AI adoption positions Africa to harness the benefits of 4IR effectively. By cultivating an ethical AI foundation, the continent is better prepared to maximise AI's numerous advantages for growth.

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[2] https://acetforafrica.org/pdfviewer/artificial-intelligence-for-economic-policymaking/?auto_viewer=true#page=&zoom=auto&pagemode=none

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