THE PHILOSOPHICAL FOUNDATION OF FAIRNESS IN MACHINE LEARNING: AN AFRICAN PERSPECTIVE

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ABSTRACT

The increasing integration of machine learning (ML) systems into critical decision-making processes necessitates a distinct exploration of fairness, especially within diverse sociocultural contexts. This paper examines the philosophical foundation of fairness in Machine Learning through an African lens, emphasizing the unique ethical, historical, and cultural dimensions that shape its interpretation and application across the continent. Unlike the Euro-Western paradigms that often prioritize individual rights or utilitarian principles, African philosophy, particularly the concept of Ubuntu, emphasizes communal well-being, interconnectedness and restorative justice. These principles provide a distinctive framework for addressing systemic biases and inequities embedded in Machine Learning systems.

Central to the African perspective is the recognition of historical injustices, such as colonialism and systemic marginalization, which continue to influence data representation and technological access. The paper argues that fairness in Machine Learning must transcend superficial equality and actively redress historical and structural imbalances. For example, the underrepresentation of African languages in natural language processing models perpetuates digital exclusion, while biased datasets reflecting Euro-Western norms often result in Euro-Western systems that poorly serve African contexts. These challenges highlight the necessity of culturally informed algorithms, inclusive datasets and indigenous data sovereignty.

The paper also explores the broader philosophical underpinnings of fairness in African ethics, including the prioritization of holistic approaches and moral economy. These perspectives advocate for Machine Learning systems that consider the collective good, minimize harm and promote equity in access and outcomes. Furthermore, the African emphasis on pluralism and diversity underscores the need for adaptable fairness frameworks that respect local contexts while contributing to global Machine Learning ethics discourse.

Operationalizing fairness in Machine Learning within African contexts requires a multidimensional approach involving technical innovation, policy interventions and community engagement. This includes fostering collaborations between policymakers, technologists and local communities to co-create ethical and culturally relevant Machine Learning systems. Additionally, investing in African research and education is crucial to empowering local voices in shaping the future of AI and marching learning.

An African perspective on fairness therefore offers valuable insights for the global AI community. By emphasizing principles such as Ubuntu, restorative justice and historical redress, it challenges profit-driven and efficiency-focused marching learning paradigms, advocating instead for systems rooted in equity and human dignity. Africa's rich cultural diversity and philosophical heritage contribute to a more inclusive understanding of fairness, highlighting the importance of addressing global power imbalances in technology development and deployment.

The philosophical foundation of fairness in machine learning, as viewed through an African lens, emphasizes collective welfare, historical context and cultural inclusivity. This approach not only addresses the unique challenges faced by African societies but also enriches the global discourse on AI ethics. By aligning technological innovation with African philosophical principles, ML systems can become tools for equity and justice, advancing both local and global objectives. This paper calls for a concerted effort to integrate African perspectives into the design, evaluation and governance of ML systems, ensuring a fairer, more inclusive technological future.