NEGLECT OF ARTIFICIAL INTELLIGENCE: THE BANE OF UNDERDEVELOPMENT IN AFRICA

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Abstract

The rapid rise in Science and technology during the early stages of the 20th century witnessed the rise in different inventions that geared towards the betterment of human race. This period however, yielded numerous inventions of sophisticated artificial intelligence like computers which functions almost like human mind. Despite the various critiques on the use of artificial intelligence, it still stands out to be of massive benefits to humanity. The questions which we intend to elucidate here include, what is the position of the Africans as regards to invention of A.I? Do Africans, like other races of the world, enjoy the benefits of A.I? If not, what is the cause? How does this effect them and .how would the problem be solved? Using the critical exposition of philosophical inquiry in here, we discovered that, Africa holistically, is not equal to other races of the world in the march of civilization. The total adaptation of artificial intelligence, hitherto, have been so much neglected by Africans even at this point in time when the developed countries are working harder to improve more on the usage of artificial intelligence. The use of artificial intelligence by the developed countries of the world is what apparently separates them from the grossly underdeveloped Africa. Therefore, Africa can only develop when they begin to embrace and invest on research that can also create technological products like artificial intelligence (computers). By so doing, there will be massive improvements in every sector of life in African countries.

Keywords: Artificial intelligence, Development, and Human dignity

Introduction

Human beings' inherent desire and quest for self development and improvement from antiquity brought about numerous inventions which geared towards bettering the life of every human. This is reflective on the fact that human beings' inherent quest for better life is what distinguishes him above every other creatures. The technology boom which started from the Late 19th century and is still improving in this contemporary times, brought about the invention of sophiscated machines like computers with simulation of human intelligence, which is also known as Artificial Intelligence (A.I). Because of its massive acceptance as the mode of doing things, artificial Intelligence however, faces some critiques especially towards its effect on human dignity. But the accuracy, effectiveness and economic benefits which AI possesses, made it too juicy to be ignored. Therefore the massive benefits which the adaptation of AI brings are the reasons most developed countries are still massively investing on AI research and developments, while simultaneously promoting science, technology, engineering and mathematics (STEM)

education. According to (Layton 2021), "technology has become the dominant factor in determining the future of every society. Its artifacts he says 'have become the indices of progress, wealth generation and economic development.' It therefore becomes evident that the gap between developing and developed countries of the world is known by the difference in technological development. Thus, the question posed in this paper is, what is the status of the African states in the scientific paradigm shifts that prompted the invention of artificial intelligence globally? This paper however, exposes the reality that African states are still massively underdeveloped because they are yet to prioritize things that really matters in quest for development. Apparently, AI base computers and machines enhance productivity, accuracy and effectiveness which result to development and advancement. Even at the present time when developed countries are working towards developing more sophiscated technologies like AI in order to be further developed, African countries still lag behind massively in every sector. This further widens the gap between African countries from developed countries of Europe, America and Asia, thereby making Africa to be dependent on these developed countries which in turn enhances imperialism.

Therefore, in this paper, we shall make conceptual analysis of the key words, and this will serve as the purpose of the work. We shall highlight the applications of AI and its impact on our society. Under this consideration, therefore, the paper will investigate the current state of AI in Africa and at the same time portray the effects of the neglect of the applications of AI in the same continent of our discourse. The conclusion however, will highlight how the role of government can bring AI to limelight which in turn will result to massive improvements and development of Africa at large.

Conceptual Analysis

Since Philosophy flourishes in distinction, explicitness and creation of better insight into the meaning of words, unexplained terms might be thwarted to the detriment of proper understanding of the context in which the words were intended. (Ezeugwu & Chinweuba 2018:29) clarified this saying, "unexplained concepts are largely the misnomers that obstruct understanding and knowledge, but a well explained concepts set the limits and points to the meanings inherent in terms." With that being said, there becomes an undeniable need to explain concepts.

Artificial Intelligence (AI)

This refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with human mind such as learning and problem solving. The important characteristic of artificial intelligence is its ability to nationalize and take actions that have the best chance of achieving a specific goal. Another ideal characteristic of AI is its ability to retain information i.e. it doesn't forget, unlike human memory that easily forgets at mere passage of time. As we make use of the expert system, and as another knowledge is coming into it, the one already stored will remain intact, which means that the passage of time is not a barrier to the authenticity of any knowledge acquired or stored (Oladele, 1994, 95:28). The expansive goal of Artificial intelligence

has given rise to many questions and debates. This has been so much so that, there is no single limitation in defining AI. Al could not only be perceived simply as an act of building machines that are intelligent, being that this conception doesn't actually explain what artificial intelligence is. What then makes a machine intelligent? Stuart Russel and Peter Noring (1995:1) approached the question by unifying their work around the theme as an intelligent agent in machines. Thus, they defined Al as, "the study of the agents that perceive from the environment and perform actions from the inside (i.e. via garbage in garbage out process)."

Development

In a nutshell, development is the process of gradually becoming bigger, stronger or more advanced. Before going further on the explanation, Walter Rodney's definition of development will be helpful to keep in mind in order to understand properly what development is:

Development is a process of change, many sided involving individualism, social stratification teaser and the society at large. This development is represented in the context of increased skill, greater freedom, creativity, self discipline, responsibility and material well-being (Rodney 1972: I).The word "development as used" in this context, is understood as advancement in science in reference to its impacts on the general well-being of the society. Though, there are of course, many other aspects of development and they include the cultural, psychological, human, religious, economic, political developments etc. In a sense, most of these aspects of development have strong connections with one another. Therefore, development here, implies advancements on the general visible conditions and standards of living, infrastructural improvements and in general, keeping abreast with the most recent inventions in science and its applications in technology. Development is opened squarely on the reduction of poverty and the improvements of other tangible factors that impinge significantly on the daily life of individuals and communities. (Oguejiofor, 2009:253).

Human dignity is the recognition that human being possesses a special value intrinsic to humanity and as such, are worthy of respect simply because they are human beings.

Application of AI and its impacts to humanity

Just like most changes that occurs in life possesses the reality of opposites, the rapid rise in the adaptation of AI, also has the reality of double edge sword, that is, it is beneficial and harmful as well. Though it is a reality that AI is still a well known concept by everybody especially in developing countries like Africa and some few others in countries of Europe and America, as many of them were not sure of what it was or how it would affect their particular companies or business. Thomas, D. Jeff, L. and David, S. (2017:3), explained Al by giving an illustration on when 1500 senior business owners in the united states in 2017 were asked about AI, only 17 percent said they were familiar with it. Despite its widespread, lack of its popularity among Africans, Asians and few of the Europeans and America, AI is a technology that is steadily improving and transforming every aspects of life. It is a life-ranging tool that enables us human beings to rethink how we integrate information, analyze data, and use the resulting insights to improve our decision making.

At this point, it becomes pertinent to state the applications of AI and also, pointing out the

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positive impacts it brings to human society. First of all, AI is not a futuristic vision, but rather something that is here today and being integrated with and deployed into a variety of sectors. This includes fields such as finance, and economics, healthcare, national security, transportation, government etc. There are numerous examples where AI is already making an impact in the world and augmenting human capabilities in significant ways.

Talking about AI's application in field of finance and economics, artificial neural networks have long been used to detect changes or claims outside of the norm, flagging these for human investigations. Banks use artificial intelligence systems today to organize operations, maintain book-keeping, invest in stocks, and manage properties. AI can react to changes overnight especially when business is not taking place, according to observers in that sector; decisions about loans are now being made by software that can take into account a variety of finely passed data about a borrower, rather than just a credit score and background check. According to Nathaniel Popper (2016), "investments in financial AI in the United State tripled between 2013 and 2014 to a total of #12.2 billion. Moreso, fraud detection represents another way AI is helpful in financial systems. It is sometimes difficult to discern fraudulent abnormalities, outliers, or deviant cases requiring additional investigation that helps managers find problems early in the cycle, before they reach dangerous levels. “

The use of AI machines in the market applications such as online trading and decision making has changed major economic theories. For example, AI-based buying and selling platforms have changed the law of 'demand and supply” in that it is now possible to easily estimate individualized demand and supply curves and this individualized pricing AI machines reduce information asymmetry in the markets and thus making market more efficient while reducing the volume of trades.

The application of AI in healthcare system has been on rapid rise for sometime now. AI is assisting doctors to carry out some tasks which hitherto, have been tedious and requires a lot of money. In 2016, a ground breaking study in California found that a mathematical formula developed with the help for AI correctly determined the accurate dosage of immunosuppressant drugs to give to organ transplant patients. AI is helping designers to improve computational sophistication in healthcare for example; merantix is a German company that applies deep learning to medical issues. According to Rasmus Rothe (2017), it has an application in medical imaging that “detects” lymph nodes in the human body in computer tomography (CT). Similarly, Eric, Horvitz (2016:5), was of the view that AI tools are helpful because they predict in advance potential challenges ahead and allocate resources to patient education, sensing and proactive interventions that keep patients out of the hospitals. AI also brought about numerous test machines that detect any form of disease, while also enhancing the development of the vaccines for the treatments. Furthermore, AI plays a substantial role in national defense (Security). The main reason for military applications of AI is to enhance communication, sensors, integration and interoperability. AI research is underway in the fields of intelligence collection and analysis, logistics, cyber operations, information operations, command and control, and

in a variety of semiautonomous and autonomous vehicles Jane Croft (2019). Artificial intelligence technologies enable coordination of sensors and effectors, threat detection and identification, marking of enemy positions tracking etc. Military drones capable of autonomous action are widely considered a useful asset. It's also an effective means for combating terrorist insurgencies. Because of its massive benefits towards national security, most countries invest so much in developing and acquiring AI base machines for security purposes. According to Yannakakis, G.N. (2012: 255-292). Worldwide annual military spending on robotics rose from US $5.1billion in 2010 to US $7.5billion in 2015. Again, the impact of AI is also evident in transportation sector. Apparently, transportation represents an area where AI and machine learning are producing major innovations, done delivery systems, all use advanced technological capabilities. Those features include automated vehicle guidance and breaking, lane changing systems, the use of cameras and sensors for collision avoidance, the use of AI to analyze information in real time, and the use of high performance computing and deep learning systems to adapt to new circumstances through detailed maps. A researcher by Camron King and jack Kaitson of Brook invested in autonomous vehicle technology between August 2014 and June 2017. This implies that AI is present in transportation, and makes it even better.

Artificial intelligence in government consists of the applications and regulations. AI, just as it's relevance in other sectors, also makes the act of Governance easy. Recently, it is paired with facial recognition systems which may be used for mass surveillance. This is already the case in some part of China. Moreso, in 2019, the technology city of Bengahuru in India was set to deploy AI managed traffic signal systems across the 387 traffic signals in the city. This system will involve the use of cameras to ascertain traffic density and accordingly calculate the time needed to clear the traffic across streets (George, 2019). AI base machines are now widely used to conduct elections effectively. The introduction of many new technologies for smooth conduction of the elections has brought about credible voting system which improved the confidence of elections. This includes; GPS tracking of EVMs and YY PATs, voter helpline, poll data monitoring and election expenditure monitoring via CVIGIL, PWD, APP, etc. AI powered voting could also liberate people from stress of vote from whichever city or place they are. More so in relation with forgoing, the use of facial recognition technology could enable a person to vote from any polling booth in India. This technology has the potential to take voters turnout upwards, giving more Indians chance to participate in its democracy. (Chandran, 2020).

Therefore, the rise in the use of AI is not just about trend; rather it is adopted because of its massive benefits to humanity. That is why top countries are investing many resources in Artificial intelligence development and research.

The current state of AI in Africa

Artificial intelligence which is arguably the most revolutionary technology that humanity ever experienced has also turned out to be the biggest means of development among countries of Europe and America. Its benefits are the reasons these developed countries are striving to further develop and implement much of it. But sadly, the African continent is still lagging behind, and for AI's potential to be fully harnessed, challenges like

inadequate knowledge, infrastructure and research capacities, need to be fixed. If Africa won't find a solution to harness AI's full potentiality quickly enough, the digital divide will be exacerbated, further widening the gap between this continent and the rest of the world. Also because of AI's ability to influence human society so deeply, it will open up a unique opportunity to improve the lives of the wealthy and poor people equally.

The current state of AI in Africa further proves that it is being neglected and their effect is seen in the countries of Africa. The continuous failure of African Leaders to prioritize adaptation of AI have been the reason for wide gap in the global inequalities which is further resulting Africa to be loosing the little ground it may have gained over the rest of the world. Though efforts are recently being made by Africans to tackle this lack of development, like; the point rose at the recent "UNESCO Forum on Artificial Intelligence in Africa" which took place in Morocco on 12th and 13th of December 2018, "that the proper use of local human is the best approach to harness the full potential of AI. In tandem with the foregoing, the implementation of the discussed point at the UNESCO forum about AI in Africa still remains in Jeopardy. This is because there is still not an enabling environment for AI to thrive. There is still massive illiteracy, lack of infrastructure, inadequate research facilities etc. This further hinders the growth of AI in Africa because AI requires robust networks, immense computing power and stable connections to be able to thrive effectively.

Moreso, it is said that the reason why developing countries are poor is because they see how productivity is driven in part by limited automation. They are not intensively using technologies invented long ago to raise that productivity. ie, technology indicating tractors and combine harvesters, spindles, Bessemer plants, and electricity. (Comin, DA: 2014). What is behind the slow diffusion of such technologies is complex but again, poverty and lack of well-paid formal sector job is associated with the low use of productive technologies. To tackle these limitations, it becomes pertinent to examine the substantial role of Government towards the future of AI in Africa.

The role of African Governments

One of the reasons for the growing roles of AI is the tremendous opportunities for economic development that it presents. A project undertaken by price water house coopers estimated that "artificial intelligence technologies could increase global GDP by $15.7 trillion, a full 14% by 2030 (Price Water House Coopers, 2017). With that being said, the role of government in the growth of AI in Africa becomes substantial. According to Greg, (2016), the US Federal government invests only $1.1 billion in non-classified AI technology. Similarly, Amir, Khosrowshahi, (2018), opined that in order to boost economic development and social innovation, Federal officials need to increase investment in artificial intelligence and data analytics. Higher investment is likely to pay for itself many times over in economic and social benefits. Therefore, below are few reasons how the government of Africa can enhance AI for the growth of Africa:

1) **Promotion of digital education and workforce development**

   It is said that one of the yardsticks for judging a developed country is the state of their education sector. Therefore, as AI application accelerates across many

sectors, it is vital that we reimaging our educational institutions for a world where AI will be ubiquitous and students need a different kind of training they currently receive. Currently, African students do not have within their reach, the skills required in an AI dominated landscape. For these reasons, African Government need to step up their games as regards to fixing the system by providing students for a digital future in IBM's Teacher Advisor Program by utilizing Watson's free online tools to help teachers bring the latest knowledge in the classroom. They enable instructors to develop new lesson plans in STEM and non-STEM fields, find relevant instructional videos, and help students get the most out of the classroom. (Stephen Noonan, 2017). Moreso, it is not just technical skills that are needed in an AI World but skills of critical reasoning, collaboration, design, visual display of information, independent thinking etc. Similarly, AI will reconfigure how society and the economy operate, and there needs to be "big picture" thinking on what this will mean for ethics, governance and societal impact.

2) **Encourage greater data access for researchers**

One of the biggest issues undermining the growth of technology in Africa is that the limited data access has so much limited the progress of researchers. This further makes some investors to vacate the continent because it is no longer news that Africa's drain of intellectuals is currently at its highest rate because they can't compete with developed countries who made their society enabling for these researchers. Therefore, it is the role of African government to encourage greater data access for researchers as it is not going to only benefit Africa economically, but educationally and infrastructure-wise.

3) **Embrace Technological trends**

Surprisingly, most African governments still doesn't embrace new changes even in 21 century. This reality is not only ignoramus, but dangerous as its impact is the reason why Africa is still grossly poor and underdeveloped. In 2018, Ben Muray Bruce, a Nigerian lawmaker saw his introduced electric car bill, discarded on the introduction because the fellow lawmakers hated the reality that electric cars is the new trend and will soon take over the market. This reality will further sink in the oil value, which is the major source of Nigeria's economy. Therefore, with investment in AI researcher, Africa can start leveling up with the rest of the world in technology. And this can only be attainable when African leaders understand the potentials of AI and the opportunities it will create for African to harness their natural resources.

4) **Penalize malicious behavior and promote cyber security**

As with any emerging technology, it is important to discourage malicious treatment designed to trick software or use it for the mixed reality of the use of AI, where it is used for good purposes and at the same time, used for malicious purposes. The malevolent use of AI exposes individuals and organizations to unnecessary risks, which in turn undermined the virtues of the emerging technology. This includes behaviours like, manipulating algorithms, hacking,

compromising privacy, and confidentiality. In relation to this John, Markoff (2016:B3) stated that "Efforts to hijack AI in order to solicit confidential information should be seriously penalized as a way to deter such actions. Therefore, it is the role of the African government to provide measures that will enable technology be used in its positive ways. This is because one of the reasons Africa Lags behind in technology is that most of them are more familiar to the negativity associated with technology than the benefits it possesses.

5) **Increase government investment in AI**

According to Greg Brockman (2019), the co founder of open AI, the US. Federal government invests only $1.1billion in non-classified technology. That is far lower than the amount being pumped into technology research and development by China. The shortfall is not worthy because the economic pay offs of AI are substantial. Therefore, in order for Africa to boost their economic development and social innovation, the African government needs to increase investment in artificial intelligence and data analytics. For it is by so doing that Africa can be set out to the path of development which can only keep getting better.

Conclusion

The only thing that is permanent in this world, according to Heraclitusis "change". Starting from the stone era, there have been series of change in the world via the applications of the human knowledge. These paradigm shifts however, have put development on the cusp of inventing many sophisticated artificial intelligence like computers and data analytics which aid in revolutionizing many sectors of life to achieve global development. There are already deployments of AI in numerous fields, e.g. finance, national and international security, health care, transportation, governance etc, which have yielded fruits by enhancing decision making, business models, risk mitigations and system performances. Technologies i.e. AI, have contributed much in human development and that of the society generally, and thus, become the most influential human innovation in history. Though, there are differences in the levels of development amongst the continents of the world. These however, have led to comparative analysis between the developed and underdeveloped societies. Africa as a continent is categorized amongst the underdeveloped societies. If Africa is statistically weighed in the global developmental scale, it might possibly be the only underdeveloped race in the world. Therefore, the place of Africa in the ever changing world, still leaves a lot to be desired and there becomes the urgent need to make fruitful changes. Because, ultimately, Africa still wallows in gross ignorance which is reflective on their poor choice of leaderships, political instabilities, religious fanaticism, poor state of education and shallow mindset. These nonetheless are the factors that undermine development in this part of world. They however, can be overcome only when Africans will begin to understand how things work out with the roles which technologies or artificial intelligence like computers exhibit in the development of the human race. Whilst the major role of seeing to the progress and development of every society lies in the hands of the government, African leaders should as well understand the benefits of technology and its potentials to change the face of Africa in comparism to other races of the world. But in a

situation where the leaders fail to take appropriate actions as to take care of the above mentioned negatives factors that thwart development in our race by inventing more on artificial intelligence, there is the tendency that our future generations will still suffer the same fate as we are suffering today in the hands of the developed races.

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