Artificial Intelligence Corroborated By Blockchain Will Lead To an Unhackable World of Machines

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ABSTRACT: With the term Artificial Intelligence spreading like an inferno in today's world, it has speculated a predicament which asks if AI can take over humans in the near future. And what if this speculation turns into reality, what would be the effects of it, is a pivotal quandary to be answered. Many people may sight raft disadvantages of AI, but one has to have a calm mind and be ready to see the other side of the coin as well, and then, come to a conclusion. If AI, today, is collaborated with upcoming technologies like Blockchain - a decentralized application, then it can do wonders to the society and the entire human race. But on the other hand, if AI is misused then it holds enough capability to destroy the entire planet. And this is one of the major reasons why AI has not yet taken over humans. AI has augmented many fields today. It has its roots spread right from basic education to Sophia – the first robot to be granted citizenship. Achievements of AI are not hidden but the only problem with it, is the corridor of uncertainty it displays which suggests that A.I. might just prove to be a curse for the society. Nowadays, efforts are taken to shift the public opinion about A.I. but somehow, these efforts are always falling short to win the confidence of the people. Possibly this is a result of a psychological bias that people hold against machines by thinking that machines may drown their employment opportunities and may jeopardize the world if they get hacked. But with the introduction of web 3.0, one may feel much more secure than before as decentralized applications like the Blockchain apparently cannot be hacked. Hence, collaborating these two modern technologies of today will lead to a better tomorrow.

KEYWORDS:ARTIFICIAL INTELLIGENCE, WEB 3.0, DECENTRALIZED APPLICATION, BLOCKCHAIN, PSYCHOLOGICAL CHANGE.

I. INTRODUCTION

In spite of all the current hype, AI is not a new field of study, but it has its ground in the fifties. If one excludes the pure philosophical reasoning path that goes from the Ancient Greek to Hobbes, Leibniz, and Pascal, AI has been officially started in 1956 at Dartmouth College, where the most eminent experts gathered to brainstorm on intelligence simulation. And as soon as the research group at Dartmouth publicly released the contents and ideas arisen from their summer meeting, a flow of government funding was reserved for the study of creating a non-biological intelligence. And with the further developments, AI started getting bigger and better. AI merely meant making machines do the tedious jobs instead of humans as a result of which it had many conspicuous advantages and hence, it spread on a large scale in a very short period of time. AI now, is surrounding humans in every aspect of life. Use of AI is done nearly in every field today, right from education till hardcore inventions. As AI can even do the work of humans, research is being done to replace humans by machines at difficult workplaces. But along with time, people have started citing the disadvantages of AI. Though disadvantages may not be as many as its advantages, but they are impactful enough to result into an imbalance in daily human life and to cause a mass destruction in some cases. For the very sake, proponents of AI are relentlessly trying to come up with robust ways in which AI can be advocated to the world. And with the rise of Blockchain, it seems possible to overcome the disadvantages of AI. Consequently, human race can benefit of AI's myriad applications.

II. ARTIFICIAL INTELLIGENCE AND ITS APPLICATION

Artificial intelligence (AI) is an area of computer science that emphasizes the creation of intelligent machines that work and react like humans. According to the father of Artificial Intelligence, John McCarthy, it is "The science and engineering of making intelligent machines, especially intelligent computer programs". Humans are experimenting with the machines to know their scalability and while doing so, the curiosity of human, lead him to wonder, "Can a machine think and behave like humans do?" And, as a result, the development of AI has commenced with an aim to create machines that almost resemble like humans and thereby, do all the work that a human can do. Development of Expert systems which can predict, learn, demonstrate, explain and display intelligent behavior is on the top of priority list with regards to developments in AI. AI has loads of applications like vision systems which are capable of comprehending visual input which leads to the concept of object detection, speech recognition – which and understand what is being said and is able to perform the task as ordered. I-phone's Siri, Amazons's Alexa, Google's Google Assistant work on the same principle. Another field in which AI plays an important role is gaming. In games like chess, poker, tic-tac-toe, machines think in large number of ways based on the self-learning approach. And one of the prominent application of AI can be seen in the robots built in today's world. These robots are able to perform the tasks given by a human. They have sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. They have efficient processors, multiple sensors and huge memory, to exhibit intelligence. In addition, they are capable of learning from their mistakes and they can adapt to the new environment. And on similar grounds a robot named Sophia was made which has recently received the citizenship of Saudi Arabia. And this has led to one of the most controversial discussion trending today, "Was awarding Sophia, the citizenship,a correct decision? Can Sophia think like humans?"

III. CAN AI THINK LIKE HUMANS?

This question has to be rephrased a little and it should be,"Can AI feel like humans?" Because AI can certainly be made to think like humans but AI cannot feel like humans as they do not have any emotions. They have a neutral sentiment on each and every topic, their decisions are completely driven by the algorithms which are used to develop them. The smartness of any machine which is artificially intelligent is directly proportional to the efficiency of the algorithm on the basis of which it takes decisions. And this rational decision making is one of the major advantages of AI over humans which would signal the triumph of logic over emotion. And the day does not look far when a machine will pass the Turing test and starts creating impact on human life.

IV. IMPACT OF AI ON HUMANS

AI can really have a huge impact on human beings. Right from the beginning of the day when we open our eyes till the time at night when we close them and go to sleep we can be surrounded by AI. For that matter we can even be surrounded by AI even when we sleep, if one requires any kind of simulation for sleeping, then, it can be achieved by AI. AI can provide multiple ways to do the same job, hence, one can find the best and the easiest possible way to get the job done. And job reminds one, the impact that AI can have on employment of humans. With the rapid growth in development of AI, something which holds it back is the thought that AI can lead to unemployment. Well it is true that AI can result in unemployment of many jobs but it is also true that it will create opportunities provided the domain remains AI. The jobs that would go under the hammer would be the jobs that require minimum amount of skill set like driving a car. Self-driven cars can replace the drivers and hence, lead to unemployment. Hence, acrimony has developed in the minds of people with respect to AI. For the very sake, to know the how people feel a survey was conducted and results were very much up to the expectations. Most of the people agreed that AI is beneficial for the society but they also agreed upon, AI will lead to unemployment. Here are the results of the survey conducted.
The questions were as follows:
Q1. DO YOU KNOW ABOUT ARTIFICIAL INTELLIGENCE?
Q2. IS A.I. BENEFICIAL TO HUMANS?
Q3. DO YOU WANT A.I. TO MAKE MORE ADVANCEMENTS THAN TODAY IN FUTURE?
Q4. DO YOU AGREE WITH THE STATEMENT, "A.I. WILL RESULT IN UNEMPLOYMENT!"
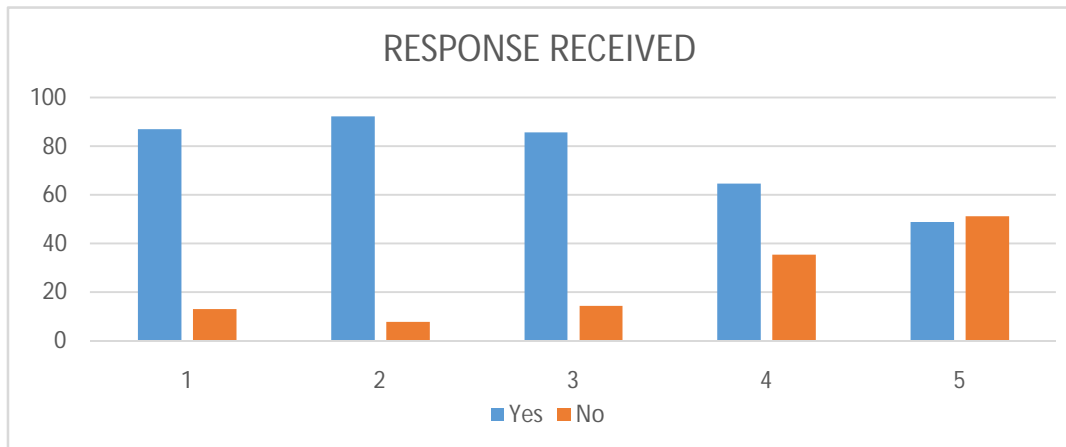
Q5. DO YOU AGREE WITH "SOPHIA - THE ROBOT" BEING AWARDED THE CITIZENSHIP?

It is quite evident from the survey that people do agree with the fact that AI can be beneficial for the society, but the problem arises when employment with respect to AI is brought under the scanner, as nearly 63% of the people surveyed thought that AI will have a negative impact on employment and also, more than half of the people who answered the survey were of the opinion that awarding citizenship to Sophia was a wrong decision. Hence, it becomes necessary to cite the advantages and disadvantages of AI.

V. ADVANTAGES AND DISADVANTAGES OF AI

AI can replace humans in the tasks which are repeated quite often, which sometimes be lethargic and extremely complicated. Since, AI involves work which is carried out by machines, the errors are almost nullified, provided the code is bug-free. Hence, AI is extremely accurate and faster as compared to normal human beings. AI cannot be affected by changing environment, thus, it can do tasks which humans cannot do. Mining of minerals, digging for fuels, space exploration constitute for some of the examples. AI now with many machine learning algorithms which form the basis of predictive analysis, predict the future, like future price of the stock, recommender systems and much more. If this sums up for the industrial cause then, on an individual level, AI can provide entertainment. And it serves to people of almost entire age group. A 3 year old can play video game with AI and also, a veteran scientist can work with AI by voice commands to operate his machines. A major advantage of AI over humans is that AI thinks logically where as humans sometimes think emotionally and hence, AI will end up taking rational decisions with no mistakes. Robotic radiosurgery, and other types of surgery in the future, can achieve precision that humans can't. Also, machines do not need to take rest and they do not even get bored. But whenever advantages are talked about, there is some room for disadvantages, too. But notably so, the disadvantages are meagre but highly impactful.AI is costly and cost effectives ways seem obscure in today's date. Similarly, if any robot gets damaged, then it will be extremely costly to fix it. Humans have the power of imagination whereas machines do not possess that ability. So, machines works on the data that is being provided by the programmer. Since, automation takes place due to AI, it takes the place of the labor resulting into unemployment, and for example, self-driven cars do not need drivers. Humans, too, somehow become too much reliant on technology and this deteriorates their mental ability. Bigger the data, better the results and therefore, storage space becomes a conundrum. Also, it is difficult to feed machine with proper data and if the machine follows natural learning process then one may never know as and when machine would be fed with bad quality data and its outcome may be detrimental to society. If the control of machines gets into wrong hands then it will result into catastrophic event. If AI can be used for cyber security then it can even be used for cyber-attacks. But every problem has a solution and for the very purpose if upcoming technologies are combined with AI then a robust combination will be formed which will help to overcome this problem.

VI. AI WITH BLOCKCHAIN

Along with AI, Blockchain is one of most promising technologies that exists today and if these two combine then it can do wonders to the field of technology. A Blockchain is a secure distributed immutable database shared by all parties in a distributed network where transaction data can be recorded and easily audited. The data are stored in rigid structures called blocks, which are connected to each other in a chain through a hash (each block also includes a timestamp and a link to the previous block via its hash). The blocks have a header, which includes metadata, and a content, which includes the real transaction data. Since every block is connected to the previous one, as the number of participants and blocks grow, it is extremely hard to modify any information without having the network consensus. Miners validate new transactions and record them on the global ledger (Blockchain). On average, a block (the structure containing transactions) is mined every 10 minutes. Miners compete to solve a difficult mathematical problem.How do the miners find this number? By guessing at random. The hash function makes it impossible to predict what the output will be. So, miners guess the mystery number and apply the hash function to the combination of that guessed number and the data in the block. The solution found is called the Proof-Of-Work. This proof proves that a miner did spend a lot of time and resources to solve the problem. When a block is 'solved', the transactions contained are considered confirmed, and the bitcoin concerned in the transactions can be spend. Also, a difficulty factor is present while mining. The difficulty of the calculation (the required number of zeroes at the beginning of the hash string) is adjusted frequently, so that it takes on average about 10 minutes to process a block.Originally developed as the accounting method for the virtual currency Bitcoin, Blockchains – which use what's known as distributed ledger technology (DLT) – are appearing in a variety of commercial applications today. Currently, the technology is primarily used to verify transactions, within digital currencies though it is possible to digitize, code and insert practically any document into the Blockchain.
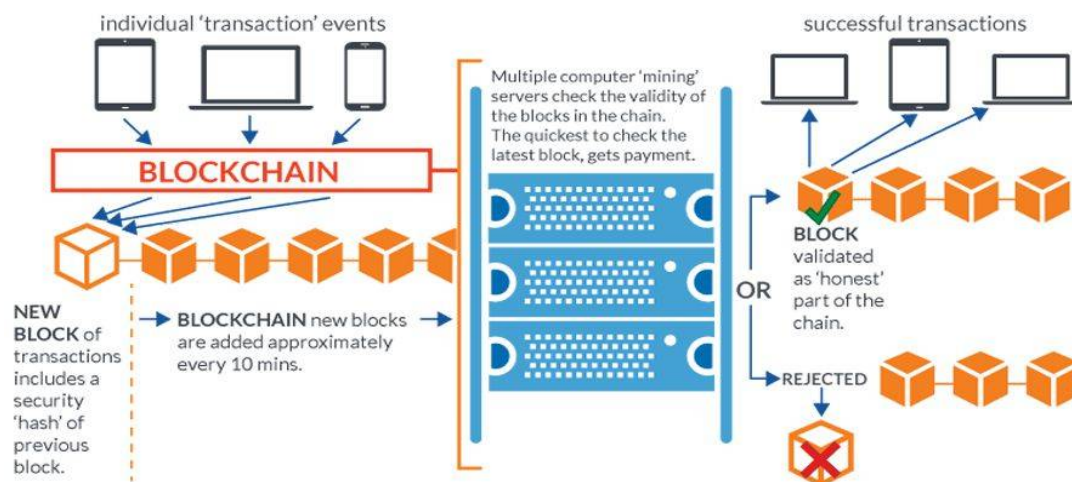
Blockchain is almost impossible to hack because it is practically impossible to generate tantamount computing power of the nodes present in the chain at once. And, this feature of Blockchain forms a formidable base which can prevent AI from getting hacked. Also, AI requires higher amount of data in order to yield to efficient results and the storage space for such data, forms a problem whose solution has to be found. Blockchain can be an ultimate solution for the very problem as well. A secure and big amount of training data means better training models, resulting into better results. As soon as part of our tasks will be managed by autonomous virtual agents, having a clear audit trail will help bots to trust each other (and us to trust them). It will also eventually increase every machine-to-machine interaction and transaction providing a secure way to share data and coordinate decisions, form a robust mechanism to reach a quorum (extremely relevant for swarm robotics and multiple agent's scenarios). Well, if this technology can assure robustness then it has to be supported via a certain psychological change of looking towards AI.

VII. PSYCHOLOGICAL CHANGE

People around the world have developed a phobia that whenever machines will be involved in some or the other tasks then, a mishap will occur as they are not a reliable to get any job done. And this can be easily observed on the railway stations, in India, where people are afraid to take tickets from the Automatic Ticket Vending Machine as they feel what if their money gets blocked inside the machine and they never get the ticket and hence, they prefer to stand in long queues to collect the ticket from ticket counter. But one has to know that machine does what it is told to be done and it cannot do something according to its own will, as it does not have any will. Hence, machines have to be looked upon with a sense of belief, that it can yield the desired result. Machines can become intelligent but machines can never become emotional and hence, will always end up taking logical decisions. And due to such intelligence, one can easily imagine some future time in which conversations with machines like one is talking to another human being become a commonplace, and it gets customary to make no linguistic distinction between "real" and "artificial" thinking. A similar transition occurred in the years after 1848, when artificial urea was synthesized for the first time by Frederick Wohler. Prior to this event, organic and inorganic chemistry were essentially disjoint enterprises and many thought that no process could exist that would convert inorganic chemicals into organic material. With that being said, almost anything and everything seems possible.

VIII. RESULT AND DISCUSSION

This paper mainly focused on Artificial Intelligence. But the only problem with AI was that, AI is difficult to trust upon mainly because of the pernicious impact that it can have if it gets hacked or gets out of control. But if this obstacle is crossed then AI can certainly be a technology which can be banked upon for the future development. And this can be achieved by AI's collaboration with Decentralized Application like the Blockchain. This can lead into a reliable architecture free from third party intervention. Also, the risk of AI being hacked also becomes logically impossible. And even, there is a strong possibility that, with the evolution of Artificial Intelligence, there will be a rise in employment opportunities – like it happened in the case of computers. And anyway, we can define the fields in which AI would be active, can't we? Hence, these two gigantically useful concepts can be brought together to create a world of AI that cannot be hacked.

IX. CONCLUSION

With the progress in the field of AI, one has to admit the fact that AI can play a huge part in the future. One really does not have to be worried with AI taking over because AI does what is told to be done and not something of its own and therefore, a psychological change is required to look upon AI. Hence, it is need of the hour to find out solution which can help in building robust applications of AI and AI's integration withBlockchain will be able to prevent AI from carrying out misanthropic activities. AI certainly has the potential to be the future but will it really be the future, only time can tell.

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