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Artificial Intelligence and Our Future

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ABSTRACT

The intellectual potentiality which is exhibited by technologies is known as Artificial Intelligence (AI). Man-made Intelligence has fully-fledged to be widespread in the modern-day world. It is the imitation of natural (i.e., human) intelligence in machines. It is a set of algorithms that are automated and programmed to study and mimic the activities of humans. As AI technologies continue to grow, they will enable robots and machines to perform all the tasks that humans do and will have a great impact on our quality of life.

Keywords - Artificial Intelligence, Machines, Revolution, Humans, Innovation, Robots, Collaboration

I. INTRODUCTION

Intelligence can be defined as an overall capacity for reasoning, analysing, problem-solving, memorising and learning.

It is the capacity of the mind specifically to understand principles, truths, grasp facts or meanings, gain knowledge and put it into practice. It is also the ability to judge, comprehend and conceptually understand. Intelligence integrates perceptive functions like insight, awareness, acuity, attention, planning, speech or memory.

A. Intelligence of Humans

Human Intelligence (HI) is natural intelligence. It is the state of the mind that is made up of skills to learn from experience, adaptation to new circumstances, management of intangible or concrete notions and therefore the ability to vary one's milieu using the gained knowledge. Human intelligence can provide several types of data and information. It can provide data on specific facts, which can be another anthropological issue, or, which they had access to and also on interpersonal relationships.

B. Intelligence of Robots

Artificial Intelligence (intelligence of robots) is the man-made version of Human Intelligence. It is the study and design of Smart Mediators (or Intelligent Agents). These intelligent agents can analyse the environments and produce actions that maximize success.

AI research uses tools and insights from many arenas including computer science, psychology, philosophy, neuroscience, linguistics, operations research, economics, probability, optimization and logic.

AI research overlaps with tasks such as robotics, control systems, arrangement, data mining, logistics, speech recognition, facial recognition and many others.

II. AI TECHNOLOGY – REVOLUTION OR EVOLUTION

In history, we had the First Industrial Revolution – a colossal transition to new manufacturing processes and revolutionized the way goods were produced. We then thrived during the Second Industrial Revolution, a phase of rapid standardization and industrialization of goods and services, including areas such as railroad networks, sewage systems, electrification, maritime, automobile and many more. Now, with the increasing need for Digitalisation, we can say that AI is indeed becoming the Third Industrial Revolution.

What is this World of Artificial Intelligence?

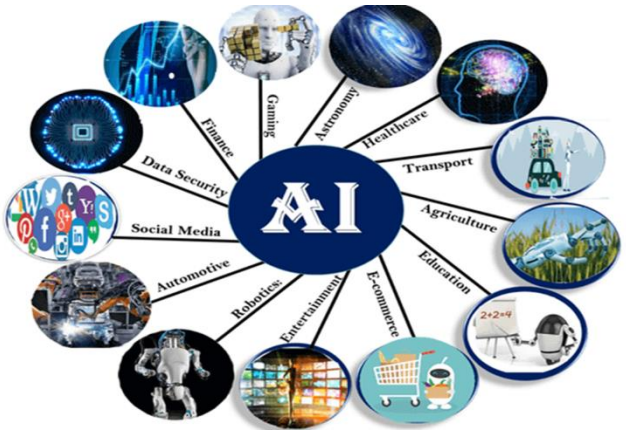
After decoding the Nazi encryption machine **"Enigma"** and helping the Allied Forces win World War II, mathematician Alan Turing changed history a second time with a simple question: "Can machines think?"

Turing's paper "Computing Machinery and Intelligence" (1950), and its consequent Turing Test, established the fundamental vision of artificial intelligence. In its essence, AI is the branch of computer science that aims to answer Turing's question in the affirmative. It is the endeavour to replicate or simulate human intelligence in machines.

Peter Norvig and Stuart Russell go on to explore four different approaches that have historically defined the field of AI:

- Thinking humanly
- Thinking rationally
- Acting humanly
- Acting rationally

Norvig and Russell focus particularly on rational agents that act to achieve the best outcome, noting "all the skills needed for the Turing Test also allow an agent to act rationally."



Artificial Intelligence is classified into two broad categories:

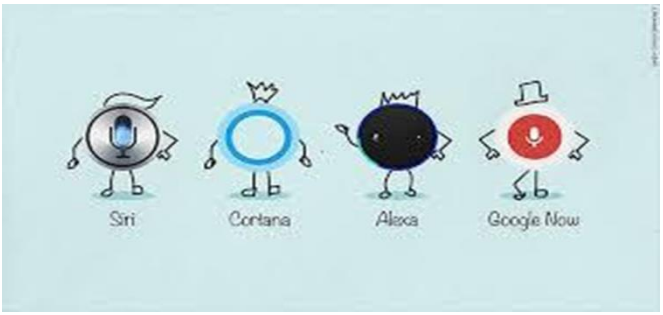
A. Narrow Artificial Intelligence

It is also known as **Weak AI**. This category of artificial intelligence functions within a limited context and is a replication and recreation of human acumen and intellect.

It is mainly efficient in executing a single task competently. Although these machines may seem intelligent yet they are operating under constraints and restrictions than even the most basic natural intelligence.
This type of AI is the most fruitful realization of technological advancement to date.

Narrow AI has undergone abundant discoveries in the last decade. It has had noteworthy social assistances and has also donated to the fiscal vitality of the whole world.

E.g., Google Search, Image Recognition Software, I-phone's Siri, Amazon's Alexa, Window's Cortana, Google Assistant, self-driving cars, etc.



B. Artificial General Intelligence

It is also known as **Strong AI**. This category of artificial intelligence is seen in cinemas, like The Matrix or The Terminator or The Transformers and many others. AGI machines have wide-ranging intelligence and are much like human beings. These AGI machines can proficiently perform various complicated tasks.

The creation and construction of human-level intelligent machines is an expedition for AGI because it has been uptight with lots of struggle and difficulty. AGI has been a source of inspiration for dystopian fantasy, where super-intelligent robots are swarming to rule over humanity, nevertheless, experts have agreed that it is nothing that we want to stress about anytime soon.

{"Everything we love about civilization is a product of intelligence; amplifying our human intelligence with artificial intelligence has the potential of helping civilization flourish like never before – as long as we manage to keep the technology beneficial." -**Max Tegmark, President of the Future of Life Institute**}

Artificial Intelligence is expanding the borders of its functionalities. There are many benefits of AI such as **24/7 Disposal, Everyday Applications, Easy handling of monotonous tasks, Medical applications, Hazardous exploration, Faster Decisions, Reduction of Error, etc.**

We should always keep in mind that when we look at the positive side of a thing, we should never be negligent towards the negative side of it. Despite having several advantages of AI, it also has some hazards involved that we cannot leave unnoticed.

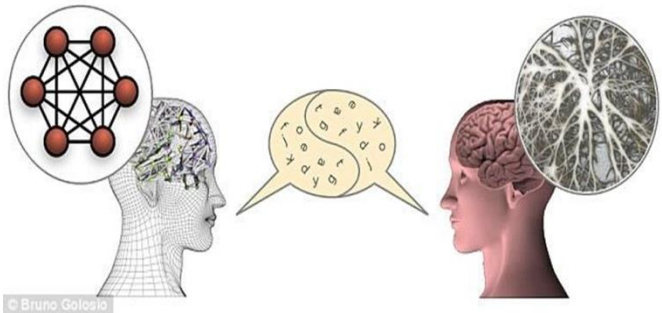
AI has disadvantages and these are **High Implementation Cost, cannot replace folks, cannot improve with Experience, lacking out of the box thinking, Risk of Unemployment** et al.

(The above image gives us an idea of how intelligent robots are going to replace human labour in near future.)

III. ARTIFICIAL AND HUMAN INTELLIGENCE – A RIVALRY OR A TEAMWORK

The question between computer science and human intelligence isn't a matter of who will triumph? But how have they connected and the way will they co-exist?

Reckoning on the way we use AI, the long haul of companies and also the human workforce might be hypothetically renovated by this ersatz intelligence because it rapidly develops, empowering machines to do all the work that we do.



If AI robots can do our jobs in the coming years, exactly how we do them or in a more efficient way then where can human beings fit in the scenario?

Considering the current state of AI competence and speed of expansion, it is crucial to contemplate the possible implications and opportunities of AI, as well as vigorously shape the progress and usage of this amazing technology in such a way that aids mankind instead of destructing it.

Impacts of Artificial Intelligence on our Future:

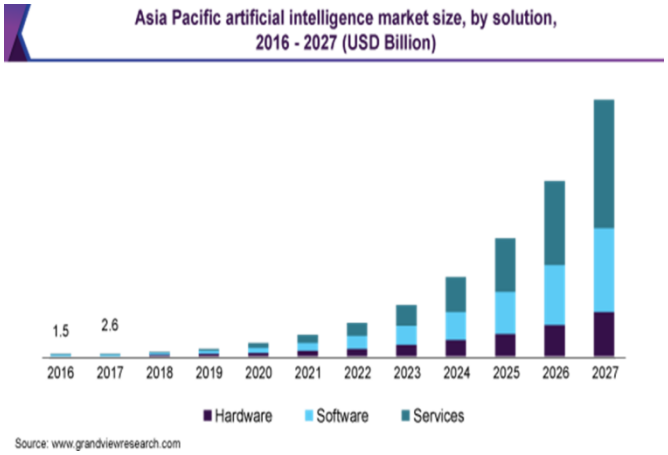
- Mechanization of tasks - This mechanization of tasks across a wide-ranging business transforming from labour-intensive to digital is a huge impact of AI. This automation of tasks can raise productivity growth by 0.8 to 1.4% (says a study). These types of tasks require a large degree of consumption (interpretation) of vast amounts of information that a computer is mandatory because it becomes difficult for humans to intervene.
- Innovative Opportunities - AI and ML have broken new trades, businesses and prospects for the workforce. Such an instance is Digital Engineering. It is becoming an emerging occupation that led to the rapid progress of technology. This field of engineering is still evolving.
- Process model – AI can open various business opportunities and improve production and involvement within the organisation which might surge demand for output and initiate the creation of a brand-new process model. This will surely improve the standard of living.
- Scope for Innovation - With AI and robotics taking a number of the mundane and labour-intensive tasks out of our hands, experts have sufficient time to have thinking, delivering ingenious and innovative actions and solutions their prime objective.

In the era of Artificial Intelligence, understanding the function of labour beyond merely sustaining a standard of living is even more important. It becomes a mirrored image of the elemental human need for participation, co-creation and contribution and thus, must not be overlooked. AI has the potential to enable the creation of a hyper-productive Human-Robot organisation that doesn't exclude humans within the course of performing tasks, but rather empowers us and promotes our benefits through teamwork and cooperation.

Faith and Trust are the most vital factors in a human-centred AI system. To encourage human confidence in AI, it's necessary to own a previous understanding under what conditions the AI system works brilliantly and under what situations it makes the correct choices. It is also important to keep up a balanced attitude in handling AI systems.

(This picture is of Sophia – the world's first AI Robot Citizen.)

The question that arises is: How are we responding and adapting to these changes formed by AI?
This is the Real AI crisis indeed. Yes, AI is creepy because if we do not know how much it is proficient and sit idly by letting our jobs to be fully overridden by AI then it is going cost too much for us.



(Above figure is the graph on the increasing market size of AI in the coming years.)

AI specialists see a less severe result. They believe that in the long run, people will still have some tasks alongside smart systems: either the technology will not be adequate to take over entirely, or the decisions will have human interventions that are very essential to hand over completely to a machine. Yet, most specialists and professionals, irrespective of being optimistic or not, expressed concerns about the long-term impact of these new AI tools on the essential elements of being human.

Rise of the Robots – Many experts say that Artificial Intelligence and Robotics can eliminate humanity if it falls into the wrong hands. However, we are on the safer side as none of the AI systems is made at that level that can destroy or enslave human civilization.
So, we need to follow the 3Cs i.e., Complacency, Competency and Cooperation to keep up with this AI Revolution on a global level.

IV. COLLABORATION: HUMAN AND ARTIFICIAL INTELLIGENCE

- **Artificial Intelligence can boost our power of analysis and reasoning abilities and heighten our creativity.**

To gain from this HI-AI partnership, leading companies must realize how humans can effectively augment machines, how machines can improve best what humans do, and how to reshape commercial processes to support this enterprise.

Humans need to perform three crucial roles for preventing robots from harming them: Training, Explaining and Sustaining.

Training – Massive training data sets are combined to teach machine-transition apps to handle colloquial terminologies, to create medical applications for spotting ailments/detecting diseases, to support financial governing, etc. Also, AI systems and machines must be skilled to interact best with Homo sapiens.

Explaining – As AIs progressively deduce the processes that are impervious, they also require human experts to describe their conduct to non-expert users. They are known as "explainers" and they are especially important in those industries which are evidence-based.

Sustaining – Apart from training AI and explaining AI outcomes, companies need "sustainers". Sustainers are those people who can continuously work to ensure that AI systems are functioning properly, safely and reliably.

Human Intelligence (HI) is unique because of its unequalled ability to distinguish between what is right or wrong, to adapt according to the surroundings, how to think new ideas, etc.
HI defines us as moral and rational human beings and our relationship with everything on earth.
With the help of this collaboration of HI and AI, we are at the brink of enhancing our potential to a great extent and it would be the most momentous scientific

development in the history of Computer Science and Technology.

V. CONCLUSION

We know that many activities at the Human-Robot interconnection call for people to do innovative and diverse tasks and to perceive things in different ways. Efficient machines and robots are helping *Homo sapiens* expand and enhance their skills in numerous ways. These machines can increase the cognitive strengths of human beings and extend their physical as well as mental capabilities.

Starting from our phones to huge machinery, AI is moving at a great pace. Although Humans have created Robots with Artificial Intelligence yet they cannot create a human being with all the rationality and ethics. It is therefore proposed that as there is an inherent synthesis between HI and AI, development in the field of Education, Medicine, Agriculture, Land and Labour can be brought under the ambits of Artificial Intelligence along with human acumen in a sustained and constructive manner for the progress of mankind. Care must be taken that at no point in time, there should be a competitive engagement between AI and HI that would lead to extreme radicalism and obliteration of sustainability.

The strange irony of AI is that the Best systems happen to be those which are Least Explicable today.

I become surprised each day thinking about how AI is moulding our world at a faster rate. Apart from the risks involved in AI, we are enthralled by the capabilities of AI machines in today's time. Hopefully, this work of mine will elucidate the amelioration of our lives with AI. Adding to it, the most important point, i.e., we need to understand the effects of AI on us as global citizens. We should not be fully dependent on Artificial Intelligence for doing our work. We need to know how to use this man-made gift in the right way. Once we grasp this notion thoroughly, it would be awesome to create a better and much more wonderful world for our future generations to happily live in.

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