

Comparative study of Artificial Intelligence VS Natural (Human) Intelligence.

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Abstract

Artificial Intelligence is an ability of digital computer or robot controlled by computer to perform the task jointly with the association of intelligent beings. The term is frequently applied to the project of developing system endowed with the intellectual process characteristics of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since 1940 development of Digital computer is going on by this development many a new things are discovered. We can collectively call it Artificial Intelligence through the help of this technique one can work for thousand peoples. It has been demonstrated that computers can be programmed to carry out complex tasks like discovering proofs for mathematical theorems or playing chess with great proficiency. Still,

despite of continuing advances in computer processing speed and memory capacity, there are as yet no programs that can match human flexibility over wider domains or in tasks requiring much everyday knowledge. Author wants to bring focus on the capacity of Human mind and Artificial intelligence, differences between these two. Through this research paper readers can come to know how the AI working for the human beings and its importance in the human life.

A] Introduction-

Natural human intelligence has always seemed to be one of humanity's greatest weapons against its enemies. Therefore, as artificial intelligence matches and surpasses human intelligence, the question is whether natural intelligence will be able to

compete with artificial intelligence in the coming years. As seen over the years, humans have fundamentally transformed geospace with ideas, imagination and innovation, and that same power of imagination will likely help humans explore the unknown of cyberspace, space and the spaces we haven't even defined yet, and thereby change the realities of the human ecosystem in the coming years. Imagination has always been an indicator of human intelligence.

Whether natural intelligence will be able to compete with artificial intelligence in the coming years. The answer to this question will define the future of humanity, as at some point, when and if artificial intelligence becomes an enemy to humankind, natural human intelligence may or may not be enough to defeat artificial intelligence. So, although artificial intelligence is becoming more and more a part of our everyday lives, the question everyone across nations needs to evaluate today is whether our efforts should be towards enhancing human intelligence or artificial intelligence.

B] Comparative Study of AI and Natural (Human) Intelligence Importance of Artificial Intelligence in human life-

As the rise of AI continues, AI is challenging and changing not only the way humans live, learn and work, but also how entities across nations: its government, industries, organizations and academia (NGIOA) con-

struct their commercial and economic industries and markets. With this technology driven growth of artificial intelligence, the need to do most manual, mathematical and mundane work is already in decline and will likely be greatly diminished in the coming years. Moreover, with all these new digital assistants and decision-making algorithms assisting and directing humans, more complex day-to-day work for humans is being greatly lessened.

While attempts to create artificial intelligence have fueled many applications and technological advances, it's fundamentally the increased processing capabilities that have made it possible to design intelligent machines that can rapidly compute and make intelligent implications from diverse data inputs. Despite these rapid advances in processing capabilities, human-like artificial intelligence, however, remains hard to determine—as it still requires further understanding of how to replicate human brain performance and processing in computers. While many Computer scientist believe that mimicking the processing method of the human brain will be the key to achieving human-like artificial intelligence, that alone is perhaps not enough, and many other variables will need to be evaluated, like memory and conscience.

C] About Human Intelligence-

From the beginning of human time,

the power of imagination has helped humans explore the unknown, evolve and change the world. As seen over the years, humans have fundamentally transformed geospace with ideas, imagination and innovation, and that same power of imagination will likely help humans explore the unknown of cyberspace, space and the spaces we haven't even defined yet, and thereby change the realities of the human ecosystem in the coming years.

Imagination has always been an indicator of human intelligence. In fact, imagination is a creative power that is necessary for inventions in cyberspace, geospace and space (CGS)—and the same power of imagination is driving scientists today to better understand human intelligence.

From what is known about humans, natural intelligence evolution has proceeded by natural selection -- from random mutations -- and by greater societal emphasis on education and learning. Some studies indicate that heritability (genes) may account for up to 50 percent of intelligence levels; and the role of the environment (education, environment, experience, resources, etc.) contribute to the rest. While much about the human brain genome is already decoded, we still don't have a clear understanding of how exactly to enhance human intelligence. The reason behind this limited understanding is that the human brain is incredibly complex, with a network of perhaps 100 billion neurons that function individually and collectively,

and as a result, understanding of the human brain remains difficult.

D] Artificial Intelligence:

Artificial Intelligence is the study and a design of intelligent agent, these intelligent agents has the ability to analyze the environments and produce actions which maximize success.

AI research uses tools and insights from many fields, including computer science, psychology, philosophy, neuroscience, cognitive science, linguistics, operations research, economics, control theory, probability, optimization and logic. AI research also overlaps with tasks such as robotics, control systems, scheduling, data mining, logistics, speech recognition, facial recognition and many others.

E] Natural (Human) Intelligence:

Human Intelligence is defined as the quality of the mind that is made up of capabilities to learn from past experience, adaptation to new situations, handling of abstract ideas and the ability to change his/her own environment using the gained knowledge.

Human Intelligence can provide several kinds of information. It can provide observations during travel or other events from travelers, refugees, escaped friendly POWs, etc. It can provide data on things about which the subject has specific knowledge, which can be another human subject, or, in the case of defectors and spies, sensitive information to which they had access. Finally, it can provide information on interpersonal relationships and networks of interest.

Comparison of Brain with a super-computers.

F] Differences Between Artificial Intelligence vs. Natural (Human) Intelligence:

Intelligence can be defined as a general mental ability for reasoning, problem-solving, and learning. Because of its general nature, intelligence integrates cognitive functions such as perception, attention, memory, language, or planning. On the basis of this definition, intelligence can be reliably measured by standardized tests with obtained scores predicting several broad social outcomes such as educational achievement, job performance, health, and longevity. So let's study the differences between Artificial Intelligence and Human Intelligence in a detail.

Human brain	3 pounds i.e 1.4 kg	1/6 basketball (80 cubic inches or 1,300 cm)	Up to 1,000,000 trillion operations per second	20 watts
Supercomputer	150 tons	Basketball court (cabinets over 4350 square feet, or 400m ²)	93,000 trillion operations per second	10 million watts

1. Energy Efficiency-

For any specific work a human brain is taking 25 watts which is a huge use of energy. Whereas an artificial or modern learning machine consuming only 2 watts for which is very less and it saves a lots of time and energy, to perform the other work.

2. Universal-

while talking with the universal application Human usually learn how to manage hundreds of skilling during the lifetime to pick from a place and to manage it as per the situate and condition. Whereas while dealing with the AL machines consuming kilowatts of energy, this machine is usually designed for a few tasks and it could not manage things which are not programmed to it. AL only in found of the program feed to the machine.

3. Multi Tasking-

When we are talking about the Human working no doubt they are multi tasking and same time they were responsible with the enough responsibility they can work at a time.

While talking about the AL the time needed to teach system on each and every responsibility is considerably high. Machines are controlled by human being only

but they are emotion free and more thchnical at a time the machine could not do more than one work.

4. Decision making –

Ability of a human being to take decision is making from experienced scenarios.

Whereas even the most advanced robots can hardly compete in mobility with 6 years old child. And this

results we have after 60 years of research and development.

5.State-

Human being have an Analogues Brains to make a calculations. Whereas AI that is computers are Digital one there are certain formulas to solve the static problems.

Key Differences between Artificial Intelligence vs Human Intelligence:

1] Nature of Existence-

Human intelligence revolves around adapting to the environment using a combination of several cognitive processes.

The field of Artificial intelligence focuses on designing machines that can mimic human behavior.

2]Memory usage-

Humans use content memory and thinking whereas, robots are using the built-in instructions, designed by scientists.

3]Mode of creation-

Human intelligence is bigger because its creation of God and artificial intelligence as the name suggests is artificial, little and temporary created by humans. also, Humans intelligence is the real creator of the artificial intelligence even but they cannot create a human being with superiority.

4]Learning process-

Human intelligence is based on the variants they encounter in life and responses they get which may result in millions of functions overall in their lives. However, for Artificial

intelligence is defined or developed for specific tasks only and its applicability on other tasks may not be easily possible.

5]Dominance-

Artificial intelligence can beat human intelligence in some specific areas such as in Chess a supercomputer has beaten the human player due to being able to store all the moves played by all humans so far and being able to think ahead 10 moves as compared to human players who can think 10 steps ahead but cannot store and retrieve that number of moves in Chess.

6]Points to Note-

The accelerating rate of technological change makes it likely that people will have both the computational capacity and scientific knowledge to create AGI in the next few decades.

Having AGI will be beneficial to humanity. For example, it may enable humans to mitigate global problems such as climate change.

It may also lead to an increase in the rate of economic growth and level of production.

Intelligent and super intelligent machines are the future of humanity.

G] Advantages of Artificial Intelligence:

Speed of execution – While one doctor can make a diagnosis in ~10 minutes, AI system can make a million for the same time.

Less Biased – They do not involve Biased opinions on decision making process

Operational Ability – They do not expect halt in their work due to saturation

Accuracy – Preciseness of the output obviously increases

Artificial Intelligence has significant dominance in many tasks, especially when it comes to monotonous judgments.

H] Enhance Human Intelligence or Artificial Intelligence?

Natural human intelligence has always seemed to be one of humanity's greatest weapons against its enemies. Therefore, as artificial intelligence matches and surpasses human intelligence, the question is whether natural intelligence will be able to compete with artificial intelligence in the coming years.

The answer to this question will define the future of humanity, as at some point, when and if artificial intelligence becomes an enemy to humankind, natural human intelligence may or may not be enough to defeat artificial intelligence. So, although artificial intelligence is becoming more and more a part of our everyday lives, the question everyone across nations needs to evaluate today is whether our efforts should be towards enhancing human intelligence or artificial intelligence. So, what can humans do as a species to proactively plan against that scenario? In the below video, I interviewed Prof. Risto Ilmoniemi, Head of the Department of Neuroscience

and Biomedical Engineering, Aalto University School of Science, Finland. They need to focus on the science of intelligence. Risk Group initiated this much-needed discussion on Science of Intelligence on Risk Roundup.

I] Examples of Artificial Intelligence

1] Robotics

Industry leaders still can't agree on what the term "robot" embodies. Roboticians understand robots to be programmable machines that carry out tasks, but nobody can pinpoint exactly where that definition ends. Today's AI-powered robots, or at least those machines deemed as such, possess no natural general intelligence, but they are capable of solving problems and "thinking" in a limited capacity. From working on assembly lines at Tesla to teaching Japanese students English, examples of artificial intelligence in the field of robotics are plentiful.

2] Smarter home robots

How it's using AI: Those makers of the popular Roomba are back with a new, much smarter robotic vacuum. The Roomba 980 model uses artificial intelligence to scan room size, identify obstacles and remember the most efficient routes for cleaning. The self-deploying Roomba can also determine how much vacuuming there is to do based on a room's size, and it needs no human assistance to clean floors.

3] Healthcare

Artificial intelligence is proving to be a game-changer in healthcare, improving virtually every aspect of the industry from robot-assisted surgeries to safeguarding private records against cyber criminals.

Healthcare has long suffered from skyrocketing medical costs and inefficient processes. Artificial intelligence is giving the maligned industry a much-needed makeover. AI-enabled virtual assistants are reducing unnecessary hospital visits and giving nurses 20% of their time back in the process; workflow assistants are helping doctors free up 17% of their schedules; and pharmaceutical companies are researching lifesaving medicines in a fraction of the time and cost it traditionally takes.

4] Finance

AI and the finance industry are a match made in heaven. The financial sector relies on accuracy, real-time reporting and processing high volumes of quantitative data to make decisions, all areas intelligent machines excel in.

As the industry takes note of AI's efficiency and accuracy, it is rapidly implementing automation, chatbots, adaptive intelligence, algorithmic trading and machine learning into financial processes. One of the biggest financial trends of 2018 is the robo-advisor, an automated portfolio manager.

5] Travel & Transportation

Artificial intelligence is becoming a mega-trend in the travel and transportation industries. From making travel arrangements to suggesting the most efficient route home after work, AI is making it easier to get around. Travel companies are especially capitalizing on ubiquitous smartphone usage. More than 70% of users claim they book trips on their phones, review travel tips and research local landmarks and restaurants. One out of three people say they've used a virtual travel assistant to plan their upcoming trips. AI-powered chatbots are rapidly changing the travel industry by facilitating human-like interaction with customers for faster response times, better booking prices and even travel recommendations.

For example, telling a travel chatbot you want to go to Paris might yield a natural language response suggesting flights, hotels and things to do in City of Light based on a user's preferences culled from the conversation.

6] Google: Smart maps

How it's using AI: Google uses AI in a number of areas, but the technology's specific application in Google Maps makes our commutes a little easier.

With AI-enabled mapping, the search giant's technology scans road information and uses algorithms to determine the optimal route to take, be it on foot or in a car, bike, bus or train.

In the near future, Google plans to further advance artificial intelligence in the Maps app by implementing its voice assistant and creating augmented reality maps in real time.

Industry impact: Aside from helping millions of users find their way every-day, the popular ridesharing service Lyft built its navigation features for drivers using Google Maps.

7] Social Media

With more than 2.77 billion active profiles across platforms like Twitter, Facebook and Snapchat, social media is in a constant battle to personalize and cultivate worthwhile experiences for users. Artificial intelligence might make or break the future of the industry. With its ability to organize massive amounts of data, recognize images, introduce chatbots and predict shifts in culture, AI is highly valuable to an industry with billions of users and about \$45 billion in annual revenue.

9] Marketing

Marketers are allocating more and more of their budgets for artificial intelligence implementation as machine learning has dozens of uses when it comes to successfully managing marketing campaigns.

Another reason for the budget increase?

AI-powered tools have now become widely available to small and mid-sized businesses. Artificial intelligence is helping marketers build in-depth customer insight reports, power

pertinent content creation and book more impactful business meetings — all without a large human influence.

J] Conclusion-

Human intelligence revolves around adapting to the environment using a combination of several cognitive processes. The field of Artificial intelligence focuses on designing machines that can mimic human behavior. However, AI researchers are able to go as far as implementing Weak AI, but not the Strong AI. In fact, some believe that Strong AI is never possible due to the various differences between the human brain and a computer. So, at the moment, the mere ability to mimic the human behavior is considered as Artificial Intelligence. Also, the utilization of artificial intelligence will surely make life even more convenient for humankind in the years to come and even force humans to evolve their skill sets, it will perhaps never be possible for such machines to completely replace the human resource.
