

## "Can Machines Think and How Can They Think": What Is More Dangerous? Artificial Intelligence or Natural Intelligence?

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There is a concept which is called ubiquitous. This word is used in relation to the following concepts:

- existing everywhere at the same time,
- always everywhere,
- prevalent,
- sprouts without planting,
- immanent.

Historically, the Telecommunications world was familiar with this concept because people were able to communicate regardless of distance by means of various telecommunications technologies.

Today the "ubiquitous" concept has become extensive with the advent of Artificial Intelligence.

Thereafter artificial intelligence exists everywhere, we run across it at any moment maybe without realizing.

Artificial intelligence has become widespread in the last several years. But the idea underlying this technology is not new. English mathematician Alan Turing was the first person who put forward the artificial intelligence idea. Turing wrote an article titled "Computing Machinery and Intelligence" in the 1950 October issue of the Mind Magazine. In this article Turing opened a philosophical discussion on the "Can machines think?" question and rejected the oppositions to the argument of "machines thinking".

In our country, worldwide known Turkish mathematician and scientist Cahit Arf was dealing with the same subject in his conference presentation titled "Can machine think and how can it think?" given within the scope of Public Conferences organized by Erzurum Atatürk University in the year 1959.

In his conference presentation, Cahit Arf was comparing the human brain with machines and saying that it is possible to design a machine which can develop itself. But he ended his conference presentation by emphasizing his concerns about the machine's inability to make decisions taking into account the aesthetics qualifications.

"The notion which characterizes these qualifications is that all of them contains an uncertainty element and there is no certain rule that they strictly obey. There are natural events external to humans, with uncertain characteristics. These are events taking place inside atoms. As such, if the events taking place in a relatively small amount of atoms, can be made effective in the operation of machines, we can hope that the machines can resemble human brain in terms of aesthetics. ... But I believe that it is impossible to do this, not even after many centuries."

The concerns of Cahit Arf is still valid today, even though the technology is evolving at an exponential pace.

Artificial Intelligence (AI) was officially born in 1956, the year of a highly notable summer conference held at Dartmouth College in New Hampshire, USA.

A group of mathematicians and computer scientists dreamed about a new research area during their meetings which lasted 8 weeks.

John McCarthy, then a young professor at Dartmouth, had coined the term "artificial intelligence" when he wrote his proposal for the workshop, which he said would explore the hypothesis that "every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it."

"There have been three important events in the past."

The first is the formation of the universe.

The second is the formation of the beginning of life.

And the third, with the same degree of importance, is the emergence of artificial intelligence."

Those are the words of Edward Fredkin, Computer Scientist at MIT who died at the age of 88 last year, in a BBC interview.

This evaluation made by Fredkin about the importance of artificial intelligence, is not an exaggerated, unsupported argument only valid in the computer scientists' world. The artificial intelligence concept, after being first used in 1956, has been a subject on which many researchers from different disciplines have been working on intensively. The point arrived, destination and the prospects about the future is quite contentious because of the different opinions and discrete approaches to the subject.

Stephen Hawking, one of Britain's pre-eminent scientists, who was well aware of the

importance of research about the artificial intelligence and in fact was in need of a primitive form of artificial intelligence in his communication with the world, has been skeptical about the development of artificial intelligence, saying that the primitive forms of artificial intelligence developed so far have already proved very useful, but he fears the consequences of creating something that can match or surpass humans. He told the BBC:

"The development of full artificial intelligence could spell the end of the human race."

According to Hawking, it would take off on its own, and re-design itself at an ever increasing rate, but humans, who are limited by slow biological evolution, couldn't compete, and would be superseded.

The probability of developing very robust autonomous weapons or new ways of oppressive methods in authoritarian regimes by using artificial intelligence were the threats which Hawking emphasized.

In the September 30, 2021 dated issue of the IEEE Spectrum Magazine, which is published by IEEE (Institute of Electrical and Electronics Engineers), the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity, there was an article titled

"The Turbulent Past and Uncertain Future of Artificial Intelligence" putting forward the question "Is there a way out of Al's boom and bust cycle?"

In this article, we see that the studies in the artificial intelligence area was developing like waves, sometimes stopping and drawing back, and sometimes doing sprints.

Artificial intelligence became a wide interdisciplinary science only after 1980's and artificial intelligence applications in industry started increasing.

The artificial intelligence development which again entered into a pause period towards the end of 1980's, have gained a momentum during the second half of 1990's with Internet becoming widespread. During the pandemics, artificial intelligence with its diverse applications, has been a rescue in many areas. Such that, while world economies are shrinking, there was no decline in the investment made in artificial intelligence area.

With the internet, many programs based on artificial intelligence has proliferated all around the globe.

When the efficiency provided by artificial intelligence applications has been proven, use of artificial intelligence in industry has increased.

On the other hand, while the return of investment made on artificial intelligence areas increased and the stock market values went fly high, global capital investments started to flow into the field of AI.

This flow of global capital in the billions of dollars level -coupled with the enthusiasm of companies and people working in this area which makes the technology jump-, indicated that a point of no return had been reached.

To give an example to the flow of capital to the artificial intelligence area, Open Al company, who started the ChatGPT service, which has been trained to provide a comprehensive

answer following the instructions given with a prompt, towards the end of 2022, has reached to a value of nearly 100 billion dollars, before it completed its first ten years.

Among the scientific disciplines underlining artificial intelligence are logic, statistics, cognitive psychology, decision theory, neurology, linguistics, cybernetics and computer engineering.

If we try to list the fields effected by artificial intelligence, from security to defense, from industry to trade, from agriculture to transportation, from health to education, from domestic affairs to foreign affairs, from entertainment to shopping, from work life to daily life, comprises every field of life that you can think of.

During the US Senate Foreign Relations Committee Hearing, titled "US Leadership on Artificial Intelligence in an Era of Strategic Competition" dated November 15, 2023, Nathaniel Fick, who was one of the witnesses, stated that responsible technological innovation is increasingly a foundational source of geopolitical power.

In this hearing the Senate discussed the steps to be taken for US leadership on artificial intelligence in an era of geopolitical competition and how to get the best of artificial intelligence in foreign relations. In fact the artificial intelligence is changing the world. In the coming years we can assume that every technology we use is somehow related to artificial intelligence. Well then, are we ready to this revolutionary change that affects our life style, the way we do business, the way we communicate with other people and the world which we live in?

We are talking about a system which learns from data, it is such a system that it stores huge amount of data in its memory and learns with a huge speed, develops non-stop, makes comments about the future, apart from the technologies humans invented so far, makes decisions by itself and it is the first technology which creates new ideas, learning from the old data, speculates about the future and do all this with a specific accuracy.

It is reported that artificial intelligence is somehow creating logic by solving the algorithms within the data.

It is capable of understanding emotions by means of multi-modality but it does not have emotional capability.

Think of a machine or a creature, very rational, which learns quickly and understands but has no feelings, wouldn't it be very scary?

On the other hand, there is the possibility of making mistakes.

We invented this technology and we are developing it, but for now we don't know how it gives us those answers.

During its process, we don't know the criterion and algorithms it uses to come to a solution. Humans can only affect a part of artificial intelligence machine learning process, they don't make up the algorithm, the machine decides by itself and this is a character that doesn't exist in the technologies invented up to now. We are encountering a technology developing by itself the first time in history.

Can we rely on the mechanisms of the market to manage the opportunities and challenges

of artificial intelligence, of course it is not possible to give an affirmative answer to this question.

Alongside its potential opportunities, artificial intelligence bears risks and even lethal threats, therefore it is essential to organize this area by regulations and beyond that it needs state leadership in each country and above all international governance.

The ITU (International Telecommunication Union) which was established in the year 1865 to formulate the regulations in the telecommunications sector and today has become the specialized organization of the United Nations in information and communication technologies, has started working on artificial intelligence regulations since 2017.

The Secretary General of United Nations António Guterres has announced the establishment of Al Advisory Board for supporting the artificial intelligence governance efforts of the international community, towards the end of last year.

The Board hold its first meeting on October 27, 2023 and published its first interim report in December, 2023. In the Al Advisory Board consisting of two co-chairs and 37 members, unfortunately there is no representative from our country. In Europe, national, regional or international, every institution have organized to work on artificial intelligence. European Union is well ahead in artificial intelligence regulations.

On the other hand, The House and Senate in USA have accelerated their artificial intelligence governance efforts. In order to keep its leadership position in the world, USA is in pursuit of leadership in artificial intelligence and recognizes China and Russia as its competitors in this field. Well, what is the situation of our country in artificial intelligence, this topic will be examined in the next article.

While these regulation studies are going ahead, the artificial intelligence technology is developing exponentially.

The question of alignment of world and humanity to this exponential development of artificial intelligence is occupying minds.

In order to slow down the development of artificial intelligence, many organizations including the United Nations and hundreds of business world leaders have made calls for moratorium.

But it is clear that it is impossible to stop a technology which has become the center of gravity for finance capital and has become pervasive on the one hand and started to play a dominant role in the geopolitical struggle of world powers on the other hand.

Furthermore, if we consider the failure of the United States in preventing the disasters and genocide created by natural intelligence at the present time, UN's urgent call for moratorium in 2021, related to artificial intelligence sales and use until sufficient security measures are taken, has no meaning.

It is impossible to examine all the aspects of artificial intelligence in one article because the subject is so extensive. It is necessary to follow the developments in this field constantly, remaining up to date and be ready for the race and it is a very fast speed race. It is in the national interest of our country to follow carefully the development of this unprecedented technology, which is still in its infant period. Let's end this article with the words of famous

historian Yuval Harari about artificial intelligence.

"Artificial intelligence is still just a tiny baby, we haven't seen anything yet. Artificial intelligence has been deployed in the real world since about 10 years. If you think about biological evolution, the evolution of life on earth took something like 4 billion years, 4 billion to reach to these plants and to reach us, the human beings. Al is in the stage of amoebas, it's like 4 billion years ago and the first living organisms are scrolling out of the organic soup. And ChatGPT and all the others, they are the amoebas of the Al world. What would T-Rex look like? And how long will it take for the Al amoebas to evolve into the T-Rex. And it won't take billions of years, maybe just take a few decades or few years. Because the evolution of it is at a completely different time scale than the evolution of organic beings. Because Al itself works on a different time scale, Al is always on, the computers in general are always on, humans and other organisms, they live, they develop by cycles, they need to rest some time, Al never needs to rest."

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