

## **THE INEVITABILITY OF TECHNOLOGICAL SINGULARITY**

Undoubtedly, the exponential growth of technology and progress that is currently being observed is leading to a future point in time when technology will rapidly improve itself to surpass human intelligence, changing human life as we know it. This process is called technological singularity.

The concept of technological singularity and the term "singularity" itself was popularized by the American science fiction writer Vernor Vinge in his 1993 essay "The Coming Technological Singularity: How to Survive in the Post-Human Era", where he noted that this would mean the end of the human era, as the new superintelligence would continue to improve and develop technologically at an unfathomable rate [4]. In addition to reiterating the nature of the concept, Vinge also laid out four possible scenarios for how this event could take place. They included:

- **Superintelligent Computers:** This scenario is based on the idea that human beings may eventually develop conscious computers. If such a thing is possible, said Vinge, there is little doubt that an artificial intelligence far more advanced than humanity might naturally result.
- **Networking:** In this scenario, large networks of computers and their respective users would come together to constitute superhuman intelligence.
- **Mind-Machine Interface:** Vinge also proposed a scenario where human intelligence could merge with computing to augment their intelligence, leading to superhuman intelligence.
- **Guided Evolution:** It is also possible, said Vinge, that biological science could advance to the point where it would provide a means to improve natural human intellect.

The other prominent prophet of singularity is inventor, futurist, and one of Google's chief engineers Ray Kurzweil. He believes that technological development is exponential. This means that the more advanced the technology is at the moment, the faster it will develop in the future. As the power of the technology will increase, the speed will also increase. In his book "The Singularity is near", Kurzweil agrees with Vinge but believes the later has been too optimistic in his view of technological progress. Futurist is convinced that by the year 2045 we will experience the greatest technological singularity in the history of mankind: the kind that could, in just a few years, overturn the institutes and pillars of society and completely change the way we view ourselves as human beings. Just like Vinge, Kurzweil believes that we'll get to the Singularity by creating a super-human artificial intelligence (AI) [5].

Additionally, in his opinion, at this time the whole Earth will begin to turn into one giant computer, and gradually this process can spread to the entire Universe. Kurzweil paints a picture of a future in which computing devices will continue to get smaller and more powerful until the accelerated evolution of technology becomes the main driver of our evolution. He says that we will no longer be surrounded by

computers: we will put them in our bodies (in the brain and the blood), thereby changing the nature of human existence

Furthermore, to understand the possibility of technological singularity, it is necessary to determine in which areas of technological development people have achieved the greatest success, that can lead humanity to the singularity:

1. computer software with genetic algorithms;
2. artificial nanobots and microchips created by the evolution of microcomputer systems;
3. integration of the human nervous system with the hardware of computers;
4. unification of human and computer consciousness in a single user interface;
5. dynamically organized computer networks.

Nevertheless, current developments in AI are not showing any progress in general or biological intelligence beyond a very low level. The top AI researchers have said that even a primitive AGI is a long way off and it's unknown if it would ever compare to human intelligence. On the contrary, some people believe that we'll eventually reach a point where technology is so advanced that it surpasses our ability to understand or control it. Others believe that there may be an exponential increase in computing power and artificial intelligence that leads to massive changes in our society, economy, and even human biology.

From these facts, we may conclude that changes have already begun, unprecedented new technologies will continue to arise and no one can determine exactly what will happen, but sooner or later the technological singularity will come and we have to be ready for it.

## REFERENCES

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