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ARTIFICIAL INTELLIGENCE – HARM OR BENEFIT?

The field of AI research was born at Dartmouth College in 1956. The attendees became the founders and leaders of AI research. They and their students produced programs that the press described as "astonishing": computers were learning checkers and chess strategies, solving word problems in algebra and physics, proving logical theorems, and speaking foreign languages. By the middle of the 60s, research in the U.S. was heavily funded by the government and laboratories had been established around the world.

Many of the results achieved using AI technologies are superior to humans: in 1997, a computer defeated the reigning world chess champion at the time, and recently, in 2016, other computers beat the world's best go and poker players. Computers prove or help prove mathematical theorems; automatically, based on machine learning methods and with the help of huge data sets.

Machine learning methods allow some automata to recognize spoken language and write it down like secretary typists of yesteryear, and others to accurately identify faces or fingerprints among tens of millions of others and process texts written in natural languages. Thanks to the same methods, cars move independently, computers are better than dermatologists in diagnosing melanomas from photographs of moles taken using cell phones, robots fight instead of people; and conveyors in factories are increasingly being automated.

AI systems using cameras and motion sensors are able to keep order on the streets of the city and in crowded places, predict the occurrence of dangerous situations, and even identify criminals. Also, smart systems are able to accurately verify documents and prevent theft. Similarly, artificial intelligence technologies work in the fire department, independently checking, warning and deciding whether to call the fire brigade. AI technologies used in the work of officials will help reduce the time for processing and systematizing government documents, patents, and licenses.

Thanks to the ability to analyze and systematize data, smart programs and machines have become effective assistants to modern doctors. The final diagnosis remains with the person, but AI helps to quickly collect and process data. Based on them, doctors are able to make a faster and more accurate diagnosis. Smart programs are already being used in medicine to diagnose oncology, predict genetic diseases, and problems with the cardiovascular system. Intelligent devices like smart bracelets can read a person's vital signs, send data to the mail of the attending physician, and even call an ambulance. Tests of such devices were carried out at the Dutch University: 60 volunteers were given bracelets that measure temperature, pressure, heart rate and breathing. In case of deviations from the norm, the devices sent a signal to the system, the message was received by the doctor. The bracelets were linked to special software that allowed doctors to monitor the condition of patients.

The most popular product created using AI technology is the smart house. It is not surprising, because the concept of its application is close to everyone: a smart home makes life more comfortable and orderly. The system is able to monitor the safety of the home, the consumption of water and light, the climate, control the condition of the wiring, and automatically do the cleaning. Portable smart devices also help in everyday life – trained translators, fitness bracelets, smart watches. How quickly and effectively intelligent systems will be introduced into our lives depends on specific projects and tasks. Of course, artificial intelligence is not immune to errors and the influence of external factors. Therefore, people will still make important decisions and be responsible for them, but with the help of smart machines and programs, people will be able to work faster, as well as make their lives more comfortable.

Self-learning intelligent systems are widely used in almost all areas, especially in industry, banking, insurance, healthcare, and defense. Many routine processes can now be automated, which will transform our professions and eventually eliminate some of them. AI involves more than just the rational analysis and reproduction by computers of most aspects of intelligence – maybe except for humor. Machines far exceed our cognitive abilities in most areas, which makes us wary of some ethical risks. There are three types of risks: lack of work that will be done by machines instead of people; consequences for the independence of individuals and for their freedom and security, in particular; fears that "smarter" machines will dominate people and cause the death of mankind. However, upon closer inspection, it becomes obvious that work for people is not disappearing, but is being transformed, requiring new skills. In the same way, the independence of a person and their freedom are not imminently threatened by the development of AI – provided, however, that we remain vigilant in the face of technology intrusion into privacy.

And finally, contrary to some claims, machines do not carry an existential risk for humanity, since their autonomy is only technical and, in this sense, does not correspond to the chains of material causality, going from information to decision-making. Furthermore, machines are not morally self-sufficient, and therefore, even if they sometimes confuse us and mislead us with their actions, they still do not have a will of their own and are subject to the goals that we set for them.