

Artificial Intelligence – Source of Inspiration or a Problem?

Elena-Iulia CHITA

*Bucharest University of Economic Studies, Bucharest, Romania¹
iulia_elen95@yahoo.com*

Silvia DUMITRESCU-POPA

*Bucharest University of Economic Studies, Bucharest, Romania²
silviapopa997@gmail.com*

Bianca MOTORGA

*Bucharest University of Economic Studies, Bucharest, Romania³
biancamotorga11@gmail.com*

Mihnea PANAIT

*Bucharest University of Economic Studies, Bucharest, Romania⁴
mihnea.panait08@gmail.com*

Abstract: *Most of the electronics used today have, to a greater or lesser extent, artificial intelligence, reducing or eliminating the need for human involvement in certain tasks. Many people have tried to answer the question: what is artificial intelligence? The difficulties of finding a definition for this term are (mainly) twofold: first, that one does not really know what natural intelligence is; then, that those who try to formulate a definition are complexed by the achievements - far from justifying such a pompous name - of this field of computer science. Although it appeared more than half a century ago as an academic discipline, artificial intelligence (AI) has seen an unprecedented development in the last few years. The increase in computing power of computers and the accumulation of huge amounts of data have allowed the ever-faster progress of automatic learning and determined its penetration into different fields, from economics and medicine to business and everyday life.*

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Introduction

Intelligence is the ability to learn, understand, and make reasonable judgments or opinions. At the same time, it is also the ability to acquire and apply knowledge and skills. Intelligence helps you solve problems, understand complex concepts, adapt to new situations, and learn from experience. The concept is complex and still a subject of debate in psychology and cognitive science. (AI) is used to describe the simulation of human intelligence by machines, which are programmed to think and learn like humans. With the help of algorithms and computer programs that can process and analyze large amounts of data, artificial intelligence systems are able to perform tasks that would normally require human intelligence: visual perception, speech recognition, decision making and language translations. text. Unlike human intelligence, however, AI systems have no consciousness

^{1, 2, 3, 4} PhD Department for Economic Studies

and are not self-aware, and their abilities are limited to the knowledge and programming they have. AI systems are trained and programmed by humans, within limits set by humans.

As a field, artificial intelligence belongs to computer science, and the term itself was coined in 1956 by John McCarthy at the first conference on AI at Dartmouth College. An extremely simple and clear definition of what AI means can be found in Shane Legg, co-founder of DeepMind Technologies. According to him, "intelligence is the ability of an agent to set goals and solve different problems in a changing environment. If the agent is a human, we are talking about natural intelligence, and if the agent is a machine, we are dealing with artificial intelligence." Some people may be concerned about the possible negative consequences of artificial intelligence, such as the transformation of the labor market or the development of autonomous weapons. However, there are many expert voices who say that AI can do a lot of good in the world, improving areas such as: medical diagnostics, industrial processes and transportation systems. Society must weigh the potential risks and benefits of artificial intelligence and have ethical principles by which to develop and use it.

Artificial intelligence has become as capable as the human mind - if not smarter. Will the future make doctors obsolete? Or the secretaries? Artificial intelligence is taking over, in most fields, the areas of responsibility considered until recently to be par excellence the strengths of the human mind. But does this ultimately mean that AI is better and smarter than humans? The human brain is not superior to artificial intelligence. Conversely - yes. The only problem would be that the two are simply not comparable.

The main difference between the two types of intelligence is the way of data processing and abstract thinking. At bottom and after all, even the most polished artificial intelligence on Earth is not that much different from any other software. They all work on the same principle: bits of data zipping through electrical circuits at breakneck speed. AI is capable of solving problems as long as those problems are found in data sets it has access to. The same cannot be said for the human brain - or at least the speed differs.

If we are to judge from the perspective of data processing, human intelligence is clearly inferior to artificial intelligence. In the time it takes the human brain to identify and classify a photo, an AI algorithm can go through millions of pictures. However, in other areas, the human brain is head and shoulders above the competition - abstract thinking, for example. The human mind can access knowledge from other fields as well - it is not for nothing that one speaks of the fullness of the mental faculties. AI algorithms have been shown many times to fail at logic as soon as they are presented with a problem outside their range of competence or that differs from the data they were trained with.

Unlike computers, humans are able to translate information into new contexts and learn from mistakes. Put in the same situation, the man would eventually find the way, even if he will be guided by the experiences already accumulated, by the names of the streets or, simply, he will ask the locals. It is also difficult for men to forget. No matter how hard we try, some memories, good or bad, are unshakable. On computers it's easier - you just have to delete the appropriate file.

All in all, it can be said that artificial intelligence lends itself very well to repetitive tasks, very clearly defined and that can be represented by means of data. Instead, human intelligence folds on tasks that require the accumulation of multiple domains and abstract decisions.

We live in a post-industrial revolution-like era where humanity feels the need for progress but also fears it. Maybe we'll talk about driverless cars, flying taxis, and maybe the 12-hour work week will be the order of the day. One thing is certain: The momentum of technology can no longer

be stopped and the fear of progress will get us nowhere. We have to embrace any innovation that makes us progress as human beings, and artificial intelligence is definitely one of them.

The future workplace and AI

There are a few jobs that are certain to survive the advance of artificial intelligence. Many of these are based on our not necessarily rational attachment to certain products or services. Even if artificial intelligence will perform certain tasks better (according to some quantifiable criteria), it is not necessarily necessary that it replace humans in the jobs corresponding to those tasks. Although a teacher simulated by artificial intelligence could teach non-stop, with lower costs, total objectivity and many other apparent advantages, there is great doubt that parents will prefer to enroll their children in a school that uses such a solution. Physicist Michio Kaku often uses the phrase "caveman principle" to denote such seemingly irrational behavior based on instincts and traditions. The development of human society shows numerous examples of the manifestation of this principle, especially when the tensions between the available options increase. In a stricter formulation, people, accustomed to working with and trusting their peers, have a harder time accepting alternative forms of interaction. Everything from online dating instead of face-to-face to meeting artificial intelligence falls into this category.

Artificial Intelligence (AI) is rapidly changing the landscape of industries today. This technology has already proved its worth in various fields, such as healthcare, finance, transportation, and manufacturing. It is expected that AI will continue to revolutionize the industrial sector in the future. Here are some ways in which AI is expected to impact the industry:

- Increased efficiency: AI-powered machines and software can perform repetitive and mundane tasks more efficiently than humans. This can save companies a lot of time and resources, as well as reducing errors.
- Better decision-making: AI can leverage large amounts of data to identify patterns and insights that human analysts might miss. This can help companies make better decisions and improve their business processes.
- Enhanced safety: AI can be used to monitor and predict the performance of machines, reducing the risk of accidents and breakdowns.
- Personalized customer experiences: AI-powered chatbots and virtual assistants can provide customers with personalized assistance, improving customer satisfaction.
- New business models: AI can enable new business models, such as predictive maintenance and subscription-based services, which can increase revenue and profitability.

Overall, AI is likely to transform the industrial sector in the coming years, helping companies to become more efficient, innovative, and profitable. However, it will also bring some challenges, such as job displacement and ethical concerns around privacy and bias. Therefore, it is important for companies and policymakers to carefully consider the implications of AI and develop strategies to maximize its benefits while minimizing its risks.

Minimizing risks in economy with AI

1. Predictive analytics: AI-powered predictive analytics can help businesses and governments to identify potential risks and mitigate them early. By analyzing past data and identifying patterns, predictive analytics can help decision-makers to take preventive measures in advance.
2. Fraud detection: AI-powered fraud detection systems can help financial institutions and businesses to detect fraudulent activities in real-time. By analyzing transactional data and identifying discrepancies, AI can flag suspicious transactions and alert authorities.

3. **Cybersecurity:** AI-powered cybersecurity tools can help organizations to protect themselves against cyber-attacks. By continuously monitoring network traffic and identifying anomalies, AI can detect potential security breaches and take preventive measures.
4. **Supply chain management:** AI-powered supply chain management systems can help businesses to optimize their supply chain operations and minimize disruptions. By analyzing historical data and identifying patterns, AI can help organizations to forecast demand, identify potential bottlenecks, and optimize inventory levels.
5. **Risk assessment:** AI-powered risk assessment tools can help businesses to evaluate potential risks associated with new ventures, investments, or partnerships. By analyzing relevant data points and identifying potential threats, AI can provide decision-makers with actionable insights.

Overall, AI has the potential to help businesses and governments to minimize risks in the economy by providing accurate and timely insights, identifying potential threats early, and taking preventive measures proactively.

AI and environment

AI has the potential to contribute to environmental sustainability by improving energy efficiency, reducing waste, and optimizing resource use. For example, AI can be used to optimize energy consumption in buildings, predict and reduce food waste in supply chains, and improve the efficiency of natural resource management. On the other hand, AI itself also has an environmental impact that needs to be managed.

The energy consumption of large-scale AI systems, such as data centers, can be significant and contribute to greenhouse gas emissions. Moreover, the production and disposal of hardware components used in AI systems can generate e-waste and other environmental issues. To address these issues, researchers and practitioners are exploring ways to design more sustainable AI systems. This includes developing algorithms and architectures that are more energy-efficient, using renewable energy sources to power AI infrastructure, and designing hardware that is more easily recyclable and environmentally friendly.

Another area where AI can help the environment is by enabling better environmental monitoring and decision-making. For example, AI can analyze satellite imagery to detect deforestation, track the migration patterns of endangered species, and monitor air and water pollution. This information can be used to inform policy decisions and take action to address environmental issues.

Overall, AI can be a powerful tool for promoting environmental sustainability if it is designed and implemented responsibly. By leveraging the technology's capabilities and addressing its environmental impact, we can use AI to help create a more sustainable future for our planet.

More and more often we feel that the air is not breathable. That we suffocate, although we see no smoke around us. This is why artificial intelligence is becoming an invaluable tool for tracking air quality and identifying sources of pollution. During accidental emissions, public administrations need to know exactly where the pollution occurred and what substances are suffocating us. Many European cities have networks of sensors that identify the level of pollution and the substances emitted. Accurate maps are generated that help authorities to intervene quickly. Similarly, if road traffic is very congested, traffic control systems incorporating artificial intelligence help direct cars to less congested streets. Complex algorithms, sensors and traffic lights direct the flow of traffic in some cities. These systems currently reduce travel time by 25%, braking time by 30% and idling time by 40%. In addition, solutions of this type also allow predicting

mortality rates and estimating financial costs in the event of accidents. All these aspects give decision-makers a more accurate picture of air pollution and contribute to the identification of viable solutions.

Until recently, self-driving cars seemed like they belonged only in the setting of a sci-fi movie. Today, artificial intelligence manages self-driving cars to make getting from point A to B more efficient. Self-driving cars can reduce fuel consumption and greenhouse gas emissions by 2% to 4% annually.

Moreover, transport companies can use AI-driven trucks to make deliveries at night. This will increase the speed of deliveries and reduce costs. In addition, traffic is free at night, so no one will be stuck on any thoroughfare. Artificial intelligence has revolutionized industries. We hear about self-driving cars and facial recognition software all the time. But this technology has a huge impact on the waste management and recycling sectors.

We know that in our country, selective collection and recycling are a bit slow. Garbage dumps grow like Făt-Frumos on the edges of cities, poisoning the air, water and soil. What if these landfills became selective collection and recycling centers? What if instead of mountains of trash, there were lanes for robots to place discarded goods according to the material they are made of? Then other robots can compact and send those products to recycling facilities. When it comes to the role of artificial intelligence in automated sorting, one statistic tells us all we need to know: employees sort between 30 and 40 recyclables per minute, while AI-powered machines can handle up to 160 recyclables per minute. Moreover, the machines can operate 24 hours a day, every day. And at the rate at which humanity produces garbage, we need employees who don't need breaks.

But we can avoid a recyclable product ending up in the landfill. There are already smart trash cans. Waste management companies are taking advantage of Internet of Things (IoT) sensors to monitor how full trash receptacles are throughout the city. This allows municipalities to optimize waste collection routes, times and frequencies. Thus, if the plastic collection bin is full, the system administrators are alerted and can send a team to remove the waste. This optimization has multiple advantages. A full trash can will cause residents to leave trash on the sidewalk. But picking up garbage on time keeps the city clean. Another advantage is that there are reductions in time, labor costs and fuel consumption.

Today many companies have developed sensor systems that measure soil moisture to determine if irrigation is needed at a given time to increase productivity. Responsible use of water eliminates waste. This is important because water is the only non-renewable resource. Furthermore, only 3% of the available water on the planet is potable. In addition, sensors can be embedded in drones equipped with cameras. With the help of artificial intelligence, the farmer can find out precisely when his vegetables and fruits are in the optimal period to be harvested.

Sensor-equipped drones also collect information from the ground. Using business intelligence systems, this data is structured and analyzed. Thus, the degree of pest infestation of a land can be determined. This allows phytosanitary treatments to be carried out only when necessary.

In the United States, data collected by weather service sensors has been uploaded to the cloud. Companies use them successfully to determine the optimal sowing period for different types of crops, irrigation or which types of crops lend themselves best to certain areas.

Land degradation is an issue often overlooked in the media. But it concerns us all. Without fertile soil, we will have no place to grow fruits, vegetables or grains. It takes a millennium to generate just three centimeters of topsoil, and soil degradation occurs at a much faster rate. Chemicals, deforestation, erosion and global warming are major contributors to soil degradation.

And if the current rate of degradation continues, the planet's arable land could disappear within 60 years, according to the United Nations. The use of artificial intelligence in agriculture not only contributes to increasing the profit of farmers, but also to the protection of the environment through the good management of resources and the reduction of the consumption of chemical substances.

Scientists tell us that life on Earth originated in the deep oceans. Although humanity has succeeded in producing oxygen on Mars, the ocean depths have yet to be explored. Many experts argue that they can be important sources of food in the future.

Oceans are the best indicators of Earth's health. That's why scientists monitor and test the health of the oceans.

Plastic bags or cups that end up in seas and oceans break into micro pieces. We don't see them, but marine animals end up swallowing them and die. These microplastics are choking the seas and oceans. Microplastics, increased CO2 levels and ocean acidification are changing the planet's surface. The key to protecting the oceans is to explore and monitor them to quickly identify changes.

We are already seeing autonomous marine vehicles equipped with artificial intelligence technologies descending to the greatest depths. Some companies are developing autonomous garbage collection systems that would help remove plastic and floating debris. Most often the term blockchain makes us think of cryptocurrencies like Bitcoin. This emerging technology helps track fisheries and identify poaching. Blockchain technology can register each fish (eg tuna) with a scannable code uploaded to the register. Therefore, retailers, customers and regulators can confirm that the fish is caught legally. Colossal sums are involved in the fishing industry. A Japanese sushi tycoon paid \$3.1 million in January 2019 for a giant tuna, making it the world's most expensive tuna. Bluefin tuna is an endangered species. Artificial intelligence is getting more and more uses in everyday life. Used correctly, this technology can improve our lives and help save the planet for future generations.

Talking about artificial intelligence in Romania may seem like nonsense: our priorities, worries, and fears are different. However, Romania is not an island, and the rapid development of technologies based on artificial intelligence (AI) is already changing the way we live, even if we don't realize it.

From intelligent personal assistants to the semi-autonomous safety features of new cars, from the design of political campaigns to the way we are manipulated into buying more at the supermarket, AI is present in our lives more than we think. And this is just the beginning.

We are not far from the moment when a factory in Romania will be closed because the owners will consider it more profitable to open another one, based on robots and located closer to the western market. The robotization of the workflow is already underway even in the companies that remain in the country. As salaries in Romania increase, the influence of new technologies on industries may make our country lose its competitiveness in many other areas. Or, on the contrary, to manage to increase the number of well-paid jobs and once again catch up with the 21st century.

Here are some jobs that will be replaced in the next 10-15 years by robots (physical or virtual) equipped with AI:

call center operators;

cashiers;

shop keepers;

assembly line, regardless of industry;

distance sales;

quality control;

truck drivers;
taximetry;
laboratory workers;
receptionists;
news editors;
data analysts.

The list is much longer, but we can already get an idea. Some jobs will disappear massively in the next 5 years while for others the threshold will be somewhere after 2030.

If maintaining a robot will cost less than a human's salary and related taxes, the decision will be simple to make.

And if, in the past, robots required difficult reprogramming, the intervention of AI leads to the optimization of this process to such an extent that they become profitable in almost all fields.

In addition, in many industries it is no longer a physical robot, but only a computer algorithm that simply has no competition.

For the moment, jobs that require creativity or knowledge in several fields are not threatened: CEOs, economists, app makers, columnists, scientists, artists, advertisers, etc. But the moment when a large part of the labor market will be dominated by robots is frighteningly close, requiring urgent and thorough societal preparation.

Although we have private companies that are at the vanguard of using AI, the Romanian state does not yet have a national strategy neither to support this technology nor to prepare society in this regard.

In fact, Romania was among the last EU states to sign the European Pact for AI. But the problem is deeper and has to do both with the mentality prevailing at the European level and with the dynamics of investments. A detailed report from China's Tsinghua University shows that there is already a close race between countries, with the US and China taking the top spots. Americans have about 14% of all specialists in the field, but they are losing ground to the Chinese. Beijing, although it has only 9% of these specialists, invests more than 60% of the total money that goes into the development of AI worldwide.

In addition, the Romanian state must take urgent measures for the retraining of people who will be made redundant following the robotization and relocation of industrial production. The reason is simple: new technologies are mainly developed in the West, where hundreds of thousands of Romanians go to take care of children and the elderly, relying on the generous investments made in social protection systems.

Education is the solution to keep these people in Romania. If the Romanian state does not provide a framework in which the young and unemployed can be reintegrated quickly, both through dual training systems (general education and trades) and through retraining courses, we risk that the depopulation will continue at an accelerated pace. As for the elite, the causes of emigration are social and political: thousands of young people disgusted by a corrupt administration choose to put their talents to the service of countries that respect them. The current assault on the democratic institutions in Romania also has this perverse effect: we lose the dynamic population and are left with an aging population, reluctant and out of step with global trends.

The national opinion survey was carried out by INSCOP Research at the behest of the STRATEGIC Thinking Group think tank. The data were collected between May 23 and June 14, 2022. Research method: interview through the questionnaire. The data were collected by the CATI method (telephone interviews), sample volume is simple, stratified being 1500 people,

representative by significant socio demographic categories (sex, age, occupation) for the non-institutionalized population of Romania, aged 18 and over. The maximum allowed error of the data is $\pm 2.53\%$, at a confidence level of 95%.

Affinity towards new technologies Being asked “Are you personally interested in learning more about how new technologies work?” 71.9% responded yes, 27.6% said no and 0.5% couldn't appreciate or didn't know.

Lifelong learning

Being asked “In the last 12 months, have you or have you not attended any of the following types of training/training to improve your skills?” 17% said yes, 81.1% said no and 1.9% couldn't appreciate or didn't know.

Perception of science and technology

33.8% of respondents agree with the statement “Artificial intelligence and automation will create more jobs than they will eliminate”.

Attitude towards the use of Artificial Intelligence

Being asked “What do you think about the use of artificial intelligence (defined as the ability of a machine to imitate functions (such as reasoning, learning, planning and creativity) in more and more fields of activity?”, 38.3% a good opinion, 41.5% no opinion either good/not bad, 18.4% had a bad opinion, 1.4% couldn't appreciate or didn't know, and 0.4% didn't respond.

Attitude towards the use of industrial robots

Being asked “In general, what do you think about using robots to simplify human tasks at work?”, 43% have a good opinion, 27.7% have a neither good/nor bad opinion, 28.2% have a bad opinion, 0.8% couldn't appreciate or didn't know, and 0.3% didn't respond.

Attitude towards the use of brain machine interface

Being asked “What do you think about the possibility of using a brain-machine interface, by means of a special headset, which would allow the mental remote control of various devices, including in the workplace?” 30.2% have a good opinion, 32.7% have a neither good/nor bad opinion, 33.2% have a bad opinion, 3.5% couldn't appreciate or didn't know, and 0.4% didn't respond.

People are aware that technology will change the workspace as we know it today and believe that it will simplify some aspects, but it's important to notice the reticence of actually using this technology and learning new skills.

Conclusions

Intelligence is a difficult term to define and for each of us it can mean many different things. In fact, it has divided the scientific community for decades, and controversies still exist over its exact definition and form of measurement.

Artificial intelligence (A.I.) is developing along with the rest of technology, but much faster than before, which could have consequences in the lives of each of us. We can anticipate that robots will soon be as ubiquitous as computers are today, forcing society to be more concerned with the impact they will have on humanity and to adapt in small steps to future possibilities regarding their fields of activity. One of the topics worth discussing concerns the creations that A.I. it achieves them with the help of the system that allows it to act autonomously. The possibility that in the future artificial intelligence will be so advanced that it even exceeds human intellectual capacity should not be excluded. It can make decisions autonomously, based on previous experiences and data collected from the environment because it can understand and learn new strategies by itself or

write other algorithms; it is made of a set of methods, algorithms, and technologies that make software "intelligent" in a way that may appear human to an outside observer.

In other words, Romania represents a favorable environment for technological development, and companies are gradually starting to develop more and more solutions based on artificial intelligence. This can be seen in a list made last year by the newspaper Adevărul, which refers to 5 of the most important companies developing artificial intelligence in Romania: UiPath, NTT DATA, Shared Service and Research & Development, Happy Recruiter and pAIdAnalytix.

Advanced technology pushes us to think about many problems, most of them being of a legal nature, which spill over into society with its development, where we can also include the difficulty of identifying the author of a work created by the artificial intelligence system, but without human intervention. If a robot develops its own mode of action, and the result is a creative work performed without a human being involved in the process, then who owns the copyright? The issue of copyright remains open. Perhaps not only man is capable of creation.

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