Review A New Age of Artificial Intelligence and Its Impact on Professions

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ABSTRACT: Artificial intelligence is a subject that has been researched for an extended time and will be investigated for a much longer time. Nowadays, many scientists (It cannot be called only experts because it is a subject that societies from many different designations are interested in.) are exploring this subject to see the outlook more obviously. Apart from this, many businesspeople are investing in AI. Because AI technologies have extremely profitable sales. That's why artificial intelligence research is supported by many corporations. Additionally, there are a great number of companies make research on AI. The main and most notorious of these companies are Alibaba, Microsoft, Apple, etc... Considering all this, although very rapid developments are expected in artificial intelligence technologies, it is a versatile and deep technology branch, so new expansions may require many ages. There will be phases of artificial intelligence that will affect more people recently. In this commentary, the forms that artificial intelligence technologies can take in the future and the direct impact of this process on redundancy in unemployment will be conferred.

1. INTRODUCTION

Artificial intelligence is all human-made machines that can do most stuff humans do. The history of these machines was initiated by Hans Berger. With Hans Berger's invention of the electroencephalograph (EEG) in 1929, it was observed that the activity between this machine and neurons was fundamentally electrical (Tudor, 2005). This led people to think that a collection of simple cells constituted thoughts, actions, and consciousness. This formed the foundation of artificial intelligence models. People wondered if they could transform this stream of consciousness into a machine. It was a stimulating hope for humans to renovate this technology and make it completely usable. Because that would make the whole thing much more uncomplicated. They wouldn't be cleaning, going to school, or needing a doctor when they were sick. Because they would have a machine that could do anything for them. But there was one thing they didn't think about, would there be a need for humans once these perfect machines that can handle anything exist? Of course, some thought about this and expressed their accepted wisdom on this subject, but it was not so important for others, because science is a discipline that is always open to progress and development. The hesitation of science is like the sun setting and the rain stopping.

Subsequently, research continued, and the first artificial neuron model was designed in 1943 by two scientists, Warren McCulloch, and Walter Pitts (Norvig & Russel, 2003, p.16). Afterward, in 1950, twenty-four-year-old undergraduate Marvin Minsky took another step. Using 3000 vacuum tubes and the autopilot system of a B-24 bomber, he produced the first artificial neural network with 40 neurons, which he named SNARC (The New Yorker, 1981, p.69). In the same year, Alan Turing presented the Turing Test, which tests the deeming ability to think machines in his article. This test: Examines whether a device can be distinguished from a person (Alan Turing,1950). With these progresses, having humanoid robots became a much more realistic dream. A scientist named John McCarthy gave the appellation artificial intelligence to these machines that think like humans in 1956 (John McCarthy, 1955).

In the light of all this knowledge, artificial intelligence has come a long-sighted way. They have become indispensable machines for people in many fields. Are these machines, which will become much more affluent and supplementary functional in the future, really a gift to everyone? Will people who are exhausted, blanked over, and in need of many more be able to protect their jobs against artificial intelligence? This article emphasizes that many people may lose the jobs they need to live with the progress made by artificial intelligence. Such mass job loss and the creation of lost occupations cause devastating damage to discrimination and the state. The main purpose of the article is to gain consideration for these circumstances and find a resolution to them.

2. QUESTIONS

1.1. What are the AI developments in education in the future? And how will this affect the academic staff?

Education is the future of civilization. Because children represent the future. In other words, if there is a problem in education, society will collapse over time. Therefore, the impact of every step taken, and every development experienced on education should be carefully examined.

In ancient times, when even the printing press was not invented yet, people needed another knowledgeable person to learn something. Then the printing press was invented, books became widespread, and people learned to read and write. So, people turned to books to gain knowledge. But thanks to the internet and computers that we all have at home recently, we could easily find the answer to every question with a few clicks and a search. But sometimes we don't need this click-and-search process anymore. Because voice assistants can answer most of your questions like unseen ghosts. When we think about all this, we can feel the presence of artificial intelligence in education as it has infiltrated all other sectors. So how will these very advanced technologies change all the balances?

America launched an application called IMPACT in Washington DC in 2009. The purpose of this application was to examine the performance of teachers with humanoid robots and analyze how much the students benefited. However, later it became clear that the program was not working properly. It was noticed that the program graduated some teachers without an exam until the determined day. Teachers who were unfairly dismissed in 2011 rebelled against this situation. IMPACT is still in development with many researchers and sponsors. Still, many people are unsure of the reliability of this data. Because it's very unlikely that a machine will be able to accurately analyze a human being. In addition,

the efficiency of the machine can be much less, as most people will get nervous and excited in such a situation.

Apart from all these, artificial intelligence can easily replace teachers in the future. One of the benefits of artificial intelligence replacing teachers is that education is neutral and objective. In addition, AI offers students personalized education anytime, anywhere. So, how will be the future of the spread of these virtual teachers? In an age where artificial intelligence is accessible to everyone, people will not want to send their children to school. This means the collapse of the educational organization. No inspection order means that there is no established system. This would introduce a lot of complexity. Where there is no school, there will be no need for employees such as principals and assistants other than teachers (Osetskyi, Vitrenko, Tatomyr, Bilan, & Hirnyk, 2020).

1.2. How Will Large Companies Be Affected by Artificial Intelligence?

Major changes in artificial intelligence will affect these companies more quickly. Because it is very difficult for small companies to cover the cost of these technologies. In addition, these companies, which want to be ahead of their competitors in the sector, will want to include artificial intelligence in their work as soon as possible. Although this is a pleasing development at first, it remains unclear what artificial intelligence developed by people will turn into in the future, how independent it will be in the decision-making process, and how its harmony with humans will be shaped. Private organizations are expected to rapidly turn to AI to accelerate the discovery of new relationships and connections and improve the user experience. In the background, it is thought that artificial intelligence, which is expected to be frequently involved in the detection of problems that escape the human eye, will greatly help companies, especially in repetitive work. And so, it's not hard to predict that many people working in human resources will become ineffective.

For artificial intelligence to replace human resources, it must first be able to fully understand human emotions. This leaves a new question: To what extent can artificial intelligence conduct itself like humans and imitate hominids? The most curious thing about artificial intelligence is whether it can be sensitive like a person and understand feelings like a spirit. Many tools such as Electroencephalography (EEG), Magnetic Resonance Imaging Instrument (MRI Scanner), Functional Magnetic Resonance Imaging Instrument (fMRI Scanner), Positron Emission Tomography (PET), Electromyography (EMG), Eye Tracker, Galvanic Skin Response (HR) It is possible to observe people's emotions with but for this, you need to be in direct contact with these machines

(Garbas, Ruf, Unfried, & Dieckmann, 2013). These devices are occasionally used in medicine and the detection of criminals. Apart from this, it is the robot developed by Cynthia Breazeal, the first and most successful artificial intelligence that can understand the emotions produced and react like a human to some extent. Cynthia Breazeal named this robot Kismet. Kismet was created in 2001 at MIT laboratories. Able to use human facial expressions, it is a robot that can socialize like a baby, learn socially, use its voice, and expressions, and use human-like movements (Breazeal, C. L. 2002). A much more advanced version of these robots are robots that can chat with people, laugh, and cry. These robots are getting better day by day. Currently, hundreds of people are working in the world to produce a robot that works flawlessly and resembles a human with all its features. If this dream comes true in the future, sales and marketing operations will be entirely in the hands of these humanoid robots. This means that companies will not need anyone but a few officers who control the robots. Considering that big companies work with so many people today, losing so many jobs can be a huge blow to society.

Today's world does not consider AI data robust enough because it makes no sense to anyone that a machine designed by an imperfect person should be perfect. However, in the future, people's opinions on this subject will change. Confidence in artificial intelligence will increase as technology progresses and becomes widespread.

3. LITERATURE REVIEW

The 1956 Dartmouth Workshop is the origin of the term "Artificial Intelligence". Ten leading scientists in the then-nascent field of artificial intelligence gathered and conducted a two-month workshop. Their other aspiration was to find a clarification to at least one of the seven main predicaments, together with artificial intelligence. Although this workshop did not achieve its purpose, it was an important step for future studies. After this study, some universities invested in artificial intelligence studies. In this way, artificial intelligence has ceased to be a dream. In a few years, artificial intelligence has become a field that the whole world researches and works on it. All these studies are about how artificial intelligence progresses and will progress. Subsequently, it was discussed how constructive or detrimental these advances would be for humans. One of the most important of these damages is that the developing technology replaces human beings and renders humans ineffective.

Figure 1: Seven members of Dartmouth

Masoud Sheiki (2022) mentioned the concern that rapid technological developments and innovations will have negative consequences on the employment structure is not new. In the 1930s, Keynes's theory of technological unemployment extends to the view that technological change causes job loss (p.104). When these are mulled over, the fact that people produce theories on this subject shortly after learning about artificial intelligence shows the solemnity of the situation more clearly. At the same time, in the study conducted by Leontief in 1983, it was underlined that over the years, almost all work will be carried out by artificial intelligence and as a result, unemployment will increase. Because people were afraid that this would happen, some inventions were prevented from becoming widespread immediately by the states. For example: After William Lee invented the knitting machine in 1589, he wanted to patent this invention. But Elizabeth I did not consent to this, thinking that this machine would cause many tailors to become made redundant (S. Humphrey, J. Nahrgang & F. Morgeson, 2007).

Dr. Sheiki argues that these negative effects will decrease with the correct redistribution policy of the states. In the last two centuries, automation and technological progress, more women starting to work, cause great changes in unemployment. Aware of this, Dr. Sheiki emphasizes that it is very difficult to predict what may happen in the future. On the other hand, Dr. Sheiki gives an example that over time, people have shifted from agriculture and crafts to manufacturing and service areas, so that technological developments do not create any unemployment.

No matter how logical these materials offered by Dr. Sheiki are, they do not relieve people's concerns. For the reason that the vast majority of all these data are assumptions based on today's technology. These assumptions are too simplistic for future robots that are virtually indistinguishable from humans or operate without errors.

Fatih Mehmet Öcal, in his article published in the International Journal of Society Researches, is one of the articles in which the effects of artificial intelligence technologies on professions and the labor force are mentioned. Dr. Öcal (2018) inspected the cycle when artificial intelligence became widespread under the sub-title of the 4th industrial revolution (p.2073). In his article,

he mentioned that automation systems will take over jobs that will not require much skill. Therefore, he mentioned that employment will weaken, and growth will slow down. Apart from all these, the article mentions not only the drawbacks but also the profits of advanced technologies. That's why the article has taken an impartial attitude (p.2080).

In his article, Li Zheng (2018) mentions that complex accounting operations can now be done by artificial intelligence and will be able to perform more difficult operations in the future. He mentions that this situation will make the job of accountants much easier. Apart from these, thanks to artificial intelligence, it can prevent frauds that may occur in accounting transactions, as well as explain its other benefits. But he did not mention the obstacles that may arise with artificial intelligence, so it is incomplete research. In addition to these benefits, there is a fact that many people will be unemployed. This is not a situation that can be ignored. On the other hand, many problems will arise due to a failure in the software of artificial intelligence. Some oversights may not be noticed because people believe that they are admirable machines (p.813).

4. METHODOLOGY

To begin this article, a problem was identified first. It was accepted as a problem that the developments experienced by artificial intelligence could increase unemployment. After that, writing this article, about what artificial intelligence was researched. A great deal of data about artificial intelligence was scanned and the history of artificial intelligence was sought. For this, diverse articles, books, and some blog posts were examined. In the meantime, many e-libraries were used. Some condensed notes have been made to establish the walkthrough on these and to make them more descriptive. In the light of the research, a working template was created. New questions were asked that would provide a solution to the problem and make it easier to understand the conundrum. New research has been done for these questions and different sources have been scanned. In this way, the work went one step further.

As a result of research on the history of artificial intelligence, it was understood that people have been working on these machines for many years. Therefore, it has been determined that there are many different views and types of research on this subject. Another reason for this is that artificial intelligence shows its presence in almost every area of life. Two of the most important of these areas are education and the industrial sector. Education is the foundation of a society. Since it is such a large area, it provides employment opportunities for many people. For this reason, the effects of a revolution that changed

the whole order, such as artificial intelligence, on education were also investigated and some conclusions were drawn about them.

Another area is industry because as long as humanity exists, it must produce and consume. This is a condition for the continuity of people. A compulsory field such as production has many more recruits than education. The inclusion of artificial intelligence in such a wide area will convert the whole process. Considering these, relevant data were analyzed, and current articles were examined. In this way, the advantages of using artificial intelligence in companies and the negative effects of these pluses on the working class are mentioned. The conclusions reached due to all this research are summarized and the data are structured.

After answering the questions asked, other articles on the subject were searched. Brief information about the first study on artificial intelligence is given, and the purpose and development of this study are mentioned. Then, other related articles were mentioned. The accurate and erroneous parts of these regulations were also examined and interpreted.

While preparing this clause, many different sources were scanned, some of which were included in the article, and some of them only created new ideas. By making new studies on these ideas, it is aimed to make the article look more meaningful. Some opposing views are also mentioned to ensure the objectivity of the article. Making use of all these data, the article took its final form.

5. CONCLUSION

Although artificial intelligence is a technology that makes our lives easier and that we need today, it can easily cause many professions to be deleted unless the adaptation process to human life is adjusted precisely. The sudden development of this state of affairs means that thousands, perhaps millions, of people lose their jobs at the same time. Individuals who lose their jobs, their families, and the state will feel the first damage. The sudden disappearance of a large part of the working class is a devastating blow to states. Recovery after such a blow requires many years and great efforts. On the other hand, some small states, may not be good at all and will be doomed to collapse.

Some solutions can be offered before such a situation occurs. One of them is to regulate the dissemination of developing technology. In this way, people can look for a new alternative to their workplace until new technology replaces them. People who are old enough can retire in the process. In addition, new personnel should not be trained in this occupational group. Thus, at the end of

this process, both the world can continue to develop, and people can make a living. As another solution, if more research is conducted on professions that are likely to disappear in the future and are expected to become widespread, new arrangements can be made in the number of graduates of these professions. In this way, children can receive education accordingly at the beginning, and in this way, they do not have to change professions in the future. In all these processes governments, companies and researchers must work together to plan for the time that is yet to come and evaluate every possibility.

REFERENCES,

[1]   M. Tudor, "Hans Berger (1873- 1941)—The History of Electroencephalography" Acta Medica Croatica, vol. 59 (4), pp. 307-313, 2005.

[2]   S. J. Russell, P. Norvig, M. Hirsch, "Artificial Intellgence: A Modern Approach." 3rd Ed, Pearson, New Jersey, 2003.

[3]   G. Loan, "An extract from an interview Jeremy Bernstein did with Marvin Minsky" The New Yorker, 1981, p.69.

[4]   A. M. Turing, "Computing Machinery and Intelligence "Mind, Volume LIX, Issue 236, 1950, pp.433–460, doi:10. 1093.

[5]   J. McCarthy, M. L. Minsky, N. Rochester, and C.E. Shannon, "A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence" Dartmouth Workshop, 1955.

[6]   [online], AI in education: Revision needed, 2019. Accessed:04.19.2023. Avaliable: https://innovation-matters.ec onomist.com/ai-in-education-revision-needed.

[7]   V. Osetskyi, A. Vitrenko, I. Tatomyr, S. Bilan, and Y. Hirnyk. "Artificıal intelligence application in educatıon: Financial implications and prospects." Financial and Credit Activity Problems of Theory and Practice, 2(33), pp. 574-584, 2019. doi: 10.18371/fcaptp.v233.20724

[8]   J. U. Garbas, T. Ruf, M. Unfried, and A. Dieckmann. "Towards robust real-time valence recognition from facial expressions for market research applications." In Proceedings of the 2013 Humaine Association Conference on Affective Computing and Intelligent Interaction, ACII 2013. IEEE, pp. 570-575, 2013.

[9]   C. L. Breazeal, "Designing sociable robots." Socially Intelligence Agents, pp 149–156, 2002. doi: 10.1007/0-306-47373-9_18.

[10]   S. Humphrey, J. Nahrgang, and F. Morgeson, "Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature.", Journal of Applied Psychology, vol. 92, no. 5, pp. 1332-1356, 2007.

[11]   Vahdatikhaki, and A. Hammad, "Risk- based look-ahead workspace generation for earthwork equipment using near real-time simulation", Automation in Construction, vol. 58, pp. 207-220, 2015. doi:10.22260/ISARC2015/0028.

[12]   SHEIKHI, M. "The Impact of Artificial Intelligence Use on the Business Market", Journal of Economics and Political Sciences, vol: 2(1) pp. 102-111, 2022.

[13]   Z. Li, "The Impact of Artificial Intelligence on Accounting" Proceedings of the 2018 4th International Conference on Social Science and Higher Education (ICSSHE 2018), volume 181, pp. 570-574, 2018. Doi: 10.2991/icsshe-18.2018.203.

[14]   F.M. Öcal, K. Altıntaş. "Investigation on The Possible Effect of The 4th Industrial Revolution on Labor Markets and Solution Recommendations", International Journal of Society Researches, Volume:8 Issue :15, pp.2066-2092, 2018. doi: 10.26466/opus.4399 52.