HBRP PUBLICATION

Research and Reviews: Advancement in Robotics
Volume 4 Issue 1

The Role of AI on Jobs, Human Rights, and Education during Pre and Post COVID-19 Pandemic

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ABSTRACT

Artificial Intelligence (AI) is the new electricity and has been expeditiously introducing in this 21st century in various forms like self-driving cars, Siri, automated online assistants, and many more. Inducing AI has become one of the most glorious victories in Computer Science. It has helped humans in the traditional way of operating and manipulating the system through advanced AI technology. This paper proposes the key terms and concepts, including "Artificial Intelligence," We next look at how different artificial intelligence systems are trained in the world today and how they can help humanity. Further, we look into the intervention of AI and COVID-19. Similarly, the paper intends to provide a jumping-off point for further, what AI means for the future of society: A job will be shredded, but not eliminated, and the sole propose to raise awareness and promote public consideration and inclusive dialogue on Artificial intelligence and human rights which will create millions of more employment opportunity.

Keywords:-*Artificial intelligence, COVID-19, human-rights, jobs, education*

INTRODUCTION

Artificial Intelligence, till now there is no agreed-upon definition of artificial intelligence; Stanford University report defines AI as "a science and a set of computational technologies that are inspired by typically operate quite differently from the ways people use their nervous systems and bodies to sense, learn, reason, and take action [1]. Similarly, Uart Russell and Peter Norvig, authors of a popular AI textbook, suggest that AI can be broken down into the following categories: (a) systems that think like humans; (b) systems that act like humans; (c) systems that reason; and (d) systems that work rationally [2]. Having such diverse categories, AI has affected our way of living and assumed that AI technology could induce a revolutionary change in human rights. The term human rights refer to those individuals and collective rights that have been enshrined first and foremost in the Universal Declaration of Human Rights (UDHR), and then further detailed in the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR). The UDHR is the leading statement of the rights that every human being enjoys by their birth. The numbers of machines and AI devices are globally increasing, which has introduced a new set of challenges to human behavior, workforce, social-cultural changes while also generating safety, privacy, and human dignity.

However, some research has presumed that AI created new forms of oppression and disproportionately affected the most

powerless and defenseless in multiple cases. As Stephen Hawking says, "The real risk with AI isn't malice but competence. A super-intelligent AI will be extremely good at accomplishing its goals, and if those goals aren't aligned with ours, we're in real trouble." AI generally optimized the work of repetitive computerized tasks. Instead of a monotonous routine, humans can work on a higher-level responsibility or more value to the business. AI programs are taught to mimic decision-making habits. They benefit from data that represents the current social situation, including human prejudices, entrenched power structures, and other factors [3]. But there's a catch: to the degree that an AI correctly replicates past human decision-making habits, it will inevitably reinforce current social prejudices [4]. According to Harari notes, "Homo sapiens is not going to be exterminated by a robot revolt. Rather, Homo sapiens is likely to upgrade itself step by step, merging with robots and computers in the process". For the foreseeable future, AI systems will not have any such capabilities of their own. Instead, they require observation from those held for such systems' design and progress to ensure that their outputs are consistent with evolving notions of fairness. For example, the numbers of machines and AI devices increase, so there will be a need for jobs surrounding them. Robots can't yet look after themselves—they need human intervention at regular intervals to keep them running smoothly [5]." AI is uncertainty," Lee says. "It is here to liberate us from routine jobs, and it is here to remind us what makes us human." and "AI will both require employees to learn new skills within the next five years and augment their existing skills." The recent outbreak of Coronavirus disease 2019 has highlighted some examples of the creation of new job opportunities for humans. It has extended the ability to do a routine job faster.

LITERATURE REVIEW

Economic Potential

The increasing progress in AI development is currently generating a mix of excitement and anxiety. Public debates over the threats of 'super-intelligent forms of AI have received extensive coverage. Some of these can have clear implications for human rights today as they changed the native job of a workforce and shifted to a new, better complex one. Many recent posts will emerge for those with expertise in applying core AI technology to new fields and applications. Professional people will be needed to determine the best type of AI for a particular application, develop and train the models, and maintain and re-train the systems. In fields such as security, where vendors have empowered security software with AI, it's up to users and security analysts to understand the new capabilities and make them the best possible use. This leads to new jobs and opportunities for many job seekers; they can participate in ample diverse applications and AI-related projects. AI has vastly touched various economic domains.

- Digital personal assistants using voice recognition, like Siri, Alexa, Skyvi, and Cortana, are highly used for business purposes [6].
- Looking at ground transportation, AI has been working as an underpin autonomous vehicle system and fully supports in managing traffic and all [7].
- In education, AI has been acting as load-bearing in personalized learning systems [8].
- AI in healthcare encourages medical practitioners to use new diagnostic and decision-support technologies [9]. In China's Railway Station [10], and AI device built by Chinese tech company Baidu that uses an infrared sensor and AI to predict people's temperatures is being used.

- Data analytics facilitated by AI are assisting in the implementation of the Sustainable Development Goals and the evaluation of humanitarian scenarios in development and humanitarian assistance [11].
- Developers in the creative industries create computer programs that can deliver basic news stories, such as on-market performance, write orchestral music [12], and generate short film segments [13].
- AI is being used in a variety of industries to analyze large amounts of data, develop market operations, and design new services [14].

Opportunities of AI and Human Rights

AI's impact on human rights comes under scrutiny. In contrast, it seems AI has enormously widespread coverage to make the human effort more minimal effort with high precision and remarkably speedy interval of time. AI is already employed in designing driverless cars that reduce road traffic deaths and robots that can perform minimally invasive surgeries. The technology utilized in automated weapons is sent in struggle circumstances and assumes a job in choices that sway general well-being, vocations, social collaboration, and human rights. Machines and AI will take over dreary errands [15].

Instead of a monotonous routine, humans can spend more time with higher-level tasks or tasks that add value to the company. Machines can continue to do computational work simultaneously, doing new jobs as well. This will give humans more time to put effort into the bigger picture and focus on specific goals. For example, if we had to point to a technology that looked as though it would replace people's workforce, the ATM (automated teller machine) might sound like a good bet; there are more tellers now than when ATMs were widely released. ATMs reduced the cost of opening bank branches. Banks responded by opening more, which required hiring more tellers [16].

At the same time, it invests in people with technical skills like running and operating the ATMs smoothly. Also, they took care of the security issues like a surveillance camera and maintaining cash and other stuff like the internet and electricity. As we know, more tellers' machines are widely placed in different locations; several workforces are needed to handle. "As businesses become ever more reliant on AI, there is increasing pressure on data capture and integration processes. Under the circumstances, we have seen an unprecedented number of roles being performed with data skill-set at their core," said Ollie Sexton, principal at Robert Walters [17].

Human rights are compulsory and systematized in the form of international law. System of regional, international, domestic institutions and organizations that provides well-developed frameworks for remedy and articulate human rights and law application to changing circumstances, including technological developments. Human rights laws can address some of the most societal harms caused by AI and prevent such damage from occurring in the future. AI Considering ethical concepts such as justice, fairness, transparency, and accountability allow for a valuable debate about AI's societal impacts and AI's role in our lives. Major AI companies such as Google, Microsoft, and DeepMind have developed ethical principles to guide how they pursue AI initiatives. Human rights are well-defined than ethics principles, providing accountability, and can be mutually reinforcing.

The role of AI in facilitating discrimination is one of the major issues of ethics. To deal with these issues, human rights organizations and AI companies

partnered to release "The Toronto Declaration," where they say the advancement of technology must not undermine human rights and help protect the freedoms that humans are all entitled to now and for future generations [18].

The developing utilization of AI in criminal equity framework dangers meddling with rights to be liberated from obstructions with individual freedom. Illegal hazard appraisal software is pegged as a device to help decide on their condemning choices only. With the accessibility of progressively more information about our lives, it is predictable that data such as online networking posts and action will be remembered for AI-based frameworks that illuminate law authorization and legal choices. AI could be tackled to recognize language or practices that show an affinity for brutality or the danger of performing specific kinds of crime. Such use would additionally embroil the rights to uniformity under the law and a reasonable preliminary. Protection is a significant right that is basic to human respect. Information assurance is basically about ensuring any close-to-home information is identified with you. Therefore, numerous administrations and districts currently perceive a central right to information insurance. Artificial intelligence systems are reliably arranged through access to and interpretation of essential data on huge informational collections. Data is moreover assembled; to make input frameworks and suit alteration and reliable refinement. This assortment of data obstructs rights to security and information assurance [19]. Artificial intelligence has started more conversations about the trade between individuals and machines than potentially any past innovative turn of events. But given the wide-ranging relationships of AI on societies and individuals, it is inevitable that internationally protected human rights will be affected by developments in this field. The research of information utilizing AI frameworks may uncover private data about oneself. It should be treated as sensitive even if derived from big data sets fed from publicly available information. For example, scientists have created ML models that can precisely appraise an individual's age, sexual orientation, occupation, and marital status just from their phone area information. They were also able to predict a person's future location from history and friends' location data. This information must be treated the same as any other personal data [20]. Artificial intelligence systems transform how things are done in companies and governments worldwide and bring with them the potential for significant intervention with human rights. On the other hand, every citizen in a country shouldn't be denied their basic fundamental rights.

All people are equivalent under the law's watchful eye and are qualified with no discrimination for the law's equivalent protection. In this regard, the law will hinder any separation and assurance to all people equal and successful security against separation on any ground such as race, color, sex, language, religion, political or different suppositions, national or social source, property, birth, them these devices will not function without constant attention from human beings [21]. It's thought that actual A.I. machines will fill just one-third out of all the latest profession generated. The remaining two-third will be made up of professional services performed by human beings [22]. It goes deeper, too. Thus, there is already a massive demand for micro-tasks in the A.I. business, like analyzing data and images that depend on humans. Generally, these are done online, outsourced to remote workers around the world. Some pulpit like Amazon MTurk and Dbrain already provide such a service, which means there's a growing market in developing

countries for workers who can do these kinds of tasks. They can earn comparatively high rates in their economy, while companies end up paying less than they would to a worker based in a developed economy like the U.S. or Western Europe.

Technology Displacement of Job

Rapid technical advancement and innovation have the potential to put jobs at risk. This problem is not new; it dates back to the 1930s when John Maynard Keynes proposed his "technological unemployment hypothesis," which states that technological revolution results in work loss [23].

Technological advancements can impact employment in two ways:

- by directly displacing workers from activities they previously performed (displacement effect)
- by increasing the demand for labor in industries or jobs that arise or develop due to technological progress (productivity effect).

Technology will supersede human labor in routine tasks, whether manual or cognitive, but not in non-routine tasks (at least not yet) [24]. Similarly, the effect of technology causes a rise in the relative demand for high-paid professional jobs that require non-routine cognitive skills, as well as a rise in the relative demand for low-paid, least-skilled jobs that require non-routine manual skills [25]. It is seen that vacancies for data analysts, managers, scientists, and engineers within these professional services have increased by 19.5 percent, 64.2percent, 28.8 percent, and 62 percent, respectively, year-on-year. According to the report, the uptake of AI is expected to create more “next-generation” jobs, with data skillsets at their core, across several industries. Agriculture is the most advanced sector in terms of AI investment, led by market service and consumer engagement. According to the survey, the market for data practitioners has risen as a result of the adoption of AI. With a 160 percent growth in vacancies since 2015, IT professionals devoted to data processing are the fastest-growing field within large or multinational organizations. Data scientists have seen a 110 percent rise in work openings year over year, while data engineers have seen an 86 percent increase [26].

However, COVID-19 has struck the entire world and has created the rise of the unemployment crisis globally. In the US, only 22 million Americans have filed for unemployment benefits within the four weeks only [27]. Similarly, in China, where the COVID-19 began, the unemployment rate jumped to 6.2 percent for January and February from 5.2 percent in December. There are various cases of job loss due to the COVID-19 effect. However, by using AI, the country can uplift its workforce and maintain a creative policy that prospectuses a recession for global market share.

The quality of the data governs the quality of any system and in the cases of COVID-19, where data in usual is comparatively inadequate, and there are only a few trusted repositories, such as the CDC Collection, C3.ai’s data lake, WHO research database, CORD-19, Go. Having the materials to construct structures, whether it's data, the SAS GitHub repository, or the Functional Genomics Platform, can be difficult. Organizations like GO FAIR's VODAN or CEDAR are tasked with improving the metadata consistency attached to COVID-related data sets. Interfacing with these individual programs is one way to help, but enhancing the fairness of data sources in general, whose utility has yet to be determined, is another field where data specialists can assist. The rush to build applications for COVID-19 response and preparedness increases the products and may not be helpful at the moment due to

their performance problem and inefficient data availability [28].

Startups are integrally involved with clinicians, academics, and government entities around the world to activate technology as the virus continues to spread to many other countries and helps to manage and fight COVID-19 by identity, track, forecast outbreaks, diagnose the virus and also providing healthcare benefits, deliver medical supplies, food and perform other tasks like sterilizing via drones and robots, develops drugs, advanced fabrics offer protections and identify non-compliance or infected individuals and many more plethora of ways AI is helping to the pandemic[29]. AI company called BlueDot, which uses machine learning to monitor outbreaks of infectious diseases worldwide, alerted for the first time and then another automated service called HealthMap and many more later on. These experiences to the government and companies are already informed and developing for upcoming pandemics with better health-oriented sectors and more to handle the situation, helping experts recognize anomalies even before reaching epidemic proportions. The coronavirus epidemic is a perfect example of how AI was used and analyze flight traveler data to determine when the new coronavirus will appear next. According to a National Geographic survey, watching the internet or social media may help spot an epidemic early. When artificial intelligence (AI) becomes more commonplace, healthcare will certainly be one of the areas where it will play a major role in keeping us safe and healthy. It also maintains their trust and continuously provides the necessary information to bypass the emergency in the future and post-pandemic. Although AI is not saving us from the coronavirus, it will play a more significant role in future epidemics [30].

COVID-19 EFFECT ON HUMAN RIGHTS AND AI

The COVID-19 crisis showed the following unbalanced and unhealthy relations between the individual vs. public rights, company rights, and civil rights the country's rights vs. public rights [31]. We can see tons of organizations engaged in providing online services and products. Big business companies are also opting for online measures to resume work during this COVID-19 quarantine. Most companies have provided their employees with the option to work from home where applicable. Various web applications such as Zoom, Skype, and Google Meet have proven helpful while holding important business meetings online. Lots of companies are choosing to go online to provide their services to clients and customers. Most small businesses whereas cannot opt to run their business online as it is merely not feasible.

AI is only a tool, and its effectiveness relies upon the operator's ability to use it. To make a profound impact on AI, there should be proper coordination between operator and tool. If we can leverage AI's knowledge using Machine learning, Neural Network, and Natural Language Processing, we can improve coordination with its administrator. Without a doubt, we can handle emergencies like the present Coronavirus pandemic.

A Cambridge company, Healx, has remodeled its AI system developed to find drugs for rare diseases. Drug discovery has traditionally been a slow and tedious way to find the exact sample for any particular virus. But the AI is hugely faster than expected. AI can do the same work done by the researcher for gathering all the data in a short period [32]. AI moves forward a little further by replacing traditional network medicine with bits of independent information with higher-order correlations, which helps find the testing data more accurately. In tech countries like the USA

and South Korea, they use more conventional deep learning to investigate the potential for the market availability of antiviral drugs used to cure Aids. Chinese technology giant Alibaba announced an algorithm that could diagnose cases within 20 seconds, with 96% accuracy [32].

Public healthcare in Nepal, Pakistan, India, Bangladesh, and Malaysia is also too divided, underfunded, and overburdened to address the needs of the majority. Doctors, on the other hand, are subject to more COVID-19 patients over longer periods of time than the average resident. More aerosol-generating treatments, such as swabbing a patient's throat or nose, puts them at greater risk of infection. In many countries like China, India, Bangladesh, Philippines, Italy, and many more states, highly skilled doctors and nurses treat the patient tested corona positively. So Artificial intelligence plays a vital role in the transmission of the virus. In Wuhan, China, robots take care of hospitals, measure necessary information, deliver medicines, disinfect the hospital staff and people, and entertain quarantined patients. Hospital staff, who mainly do flesh and blood-related stuff, are directed and controlled by the robot remotely with an information management platform that includes graphical control featuring digital twins for each robot.

As we know, Robots can be quickly disinfected and do not carry diseases by contamination, which makes it more secure and reliable than the actual hospital staff [33]. A Chinese research team has developed a new robotic system with a snake-like arm that can swab throats, minimizing the risks of exposing doctors and nurses and reducing the burden on overwhelmed caregivers. The robot has proven effective in clinical trials, but because throats come in different shapes and sizes, it will need further testing [34].

We are encouraged by the growing consciousness that human rights-based approaches to evaluating and discussing AI's social impacts have begun to receive. The spreadsheet aimed to elevate their thinking to spend more time on the real problems they were solving, instead of the manual, laborious effort of endless calculations. Brynjolfsson and his co-authors say, "Bundling suitability-for-machine-learning and non SML tasks prevent specialization and lock up potential productivity gains." This means doing a task that includes both machine learning. AI is reshaping every single purpose in which it is already in use or will soon become commonplace, and the impact on society begins to become apparent. In recent years AI has not only made it an essential quality of the technology but rather a part of the evidence to the humans who have been incredibly creative in how they use a tool that is mathematically and computationally complex; and yet at its foundation is still quite limited and straightforward [35].

DISCUSSION

With more than 7.5 billion of us currently going on the planet, the world will be testing some special human rights issues in the 21st Century. Innovative advances, especially computerized reasoning, will present both challenges and opportunities that will impact us all. Since workers usually consist of multiple interrelated activities, this may help to alleviate future workplace loss problems. Only a few of these operations are expected to be ideal for automation in most situations. We can increase efficiency gains from interrelated activities by training human labor to work successfully and efficiently with machines. This could theoretically contribute to the creation of new workers or careers as a result of collaboration and technological advances. Initiatives to equip practically human labor for this new age would necessitate strong collaboration between

authorities and agencies, as well as large technology firms with the know-how and ability to contribute to training [36]. Previous technical transition waves may provide insight into the timescales over which advantages and drawbacks from technology-enabled developments occur, as well as which communities in society are affected. This indicates that major transitional impacts are likely to disrupt certain individuals or areas. However, developing robust theoretical models for prospective improvements remains difficult [37].

AI has been the buzzword and increasingly affects our way of living, and AI can be explained as implementing cognitive knowledge to the machine to obtain a desirable goal. AI impacts every sector and has seen that human rights for the job and other aspects are not excuses. Artificial intelligence has challenges for human rights. The inviolability of human life is the central idea behind human rights. As AI is rooted in code, the availability of data required speed for operation and appropriate design goals can outperform human ability. As humans design AI systems and human decisions are way or another way biased, humans' arrangements do bias.

Jeff Bezos received a dog called SpotMini, a flexible mechanical pet fit for opening entryways, getting himself and in any event, stacking the dishwasher. This appears as though the workforce done by one servant is decreasing or may in the refrain of augmentation of the activity [38]. These are a couple of situations where the ascent of AI may decay human openings for work and different rights. To check for such affliction, Amnesty is directing AI utilization in human rights examinations and centers around the potential for segregation inside AI utilization, especially in policing criminal equity and access to essential monetary and social administrations.

CONCLUSION

The interrelation between artificial intelligence and human rights is involved, which is now clear to some extent; AI is impacting every single application in which it is already in use. The key to success for developing countries in this emerging century can conquer AI capabilities to deliver more control and service to clients. Today much more workforces are using AI to store data. Thus, it can directly or indirectly interfere with human rights. So, data protection laws, liberty, security, and safeguards for responsibility and clarity, like those we have discussed in this paper, may be able to decrease some of the worst uses known today. On the other hand, more work is necessary to safeguard human rights as AI technology is getting more advanced and expands into other areas like banking, transaction, voting, where more private data is being stored. Further, we hope this paper also accommodates more in-depth conversations in this critical area where more personal information is being stored and even for the future of human rights. AI is a new industry that creates more employment opportunities for people who have a data skill-set at its core than taking jobs from people. Employees have the chance to dive into a new field and abstract their job to a new, higher level of analysis. There was an assumption before that; the employment opportunities will be replaced through AI. But, during the COVID-19 pandemic, several pharmaceutical research firms are using AI for drug development. Most of the task was carried out through AI, i.e., Shopping, discovering medicine. It has made a substitution for jobs but has created an opportunity to induce new forms of the workforce, i.e., AI systems need a lot of data, with relevant examples in that data, to find those patterns. Since enhancing the working mechanism’s capability, individuals have made a

quantifiable impact fighting with the Corona Virus through their cognitive ability. AI lacks cognitive skills and knowledge, which confine itself as a tool. The current circumstance has uncovered the significant shortfalls of Artificial Intelligence. It cannot learn all alone, which means Artificial intelligence is just a medium. Its best uses come into play when it has good coordination with the operators (collaborative work). This human collaboration will enable AI to be the most reliable tool for good that it has the potential to be. AI is one of our most potent paths to achieve a sensible solution, but there is a primary need for high-quality, cleaned data sets. This kind of inspection can only be monitored and governed under human compensation. Adopting AI as new technology would undoubtedly have a massive impact on a variety of daily practices. Being a job snatcher, on the other hand, is not something we should be scared of. In this way, we can conclude that the gain in popularity in AI doesn't affect the workforce, but also it increases the job possibilities around the globe that the COVID-19 pandemic has hindered.

REFERENCES

1. Nascimento, A. M., & Bellini, C. G. P. (2018). Artificial intelligence and industry 4.0: The next frontier in organizations. *BAR-Brazilian Administration Review*, *15*(4).
2. Bundy, A. (2017). Preparing for the future of artificial intelligence.
3. Tenner, E.(2018). The Efficiency Paradox: What Big Data Can't Do.
4. Raso, F. A., Hilligoss, H., Krishnamurthy, V., Bavitz, C., & Kim, L. (2018). Artificial intelligence & human rights: Opportunities & risks. *Berkman Klein Center Research Publication*, (2018-6).
5. Cook, D. J., Augusto, J. C., & Jakkula, V. R. (2009). Ambient intelligence: Technologies, applications, and opportunities. *Pervasive and Mobile Computing*, *5*(4), 277-298.
6. Reis, A., Paulino, D., Paredes, H., & Barroso, J. (2017, July). Using intelligent personal assistants to strengthen the elderlies' social bonds. In *International conference on universal access in human-computer interaction* (pp. 593-602). Springer, Cham.
7. Stone, P., Brooks, R., Brynjolfsson, E., Calo, R., Etzioni, O., Hager, G., & Teller, A. (2016). Artificial intelligence and life in 2030: the one hundred year study on artificial intelligence.
8. Peirce, N., Conlan, O., & Wade, V. (2008, November). Adaptive educational games: Providing non-invasive personalised learning experiences. In *2008 second IEEE international conference on digital game and intelligent toy enhanced learning* (pp. 28-35). IEEE.
9. Montani, S. (2008). Exploring new roles for case-based reasoning in heterogeneous AI systems for medical decision support. *Applied Intelligence*, *28*(3), 275-285.
10. Johnson, K.(2020) How people are using ai to detect and fight the coronavirus.
11. Diaconu, D., Vacarelu, M. T., Popescu, V., Grigore-Radulescu, M. I., Popescu, C. F., Boghirnea, I., & Badilă, M. (2018). Journal Legal and Administrative Studies, No. 2/2018. *Journal Legal and Administrative Studies*, (2).
12. Moss, R. (2015). Creative AI: Computer Composers are changing how music is made. *New Atlas, Jan*.
13. Hutson, M (2018). Artificial intelligence faces a reproducibility crisis.
14. Vera-Baquero, A., Colomo-Palacios, R., & Molloy, O. (2016). Real-time business activity monitoring and

analysis of process performance on big-data domains. *Telematics and Informatics*, *33*(3), 793-807.
15. [15] Bhandari, N.(2018). AI impact on human rights to come under scrutiny.
16. [16] Reese, B.(2018). Artificial intelligence will be the most significant jobs engine the world has ever seen.
17. Baska, M. AI is creating an 'explosion' in demand for tech skills, says the report. People Management.
18. World Health Organization et al. The Toronto declaration on the global prevention of elder abuse. Geneva: WHO, 3, 2002.
19. NOW ACCESS. Human rights in the age of artificial intelligence, 2018.
20. Bellovin, S. M., Hutchins, R. M., Jebara, T., & Zimmeck, S. (2013). When enough is enough: Location tracking, mosaic theory, and machine learning. *NYUJL & Liberty*, *8*, 556.
21. Matskevich, D.(2018). How the AI, a revolution will create jobs, not destroy them.
22. UN General Assembly. Promotion and protection of the right to freedom of opinion and expression, 2014.
23. Asimakopulos, A. (1983). Kalečki and Keynes on finance, investment and saving. *Cambridge Journal of Economics*, *7*(3/4), 221-233.
24. Autor, D. H., Levy, F., & Murnane, R. J. (2003). The skill content of recent technological change: An empirical exploration. *The Quarterly journal of economics*, *118*(4), 1279-1333.
25. Goos, M., & Manning, A. (2007). Lousy and lovely jobs: The rising polarization of work in Britain. *The review of economics and statistics*, *89*(1), 118-133.
26. Ontanón, S., Synnaeve, G., Uriarte, A., Richoux, F., Churchill, D., & Preuss, M. (2013). A survey of real-time strategy game AI research and competition in StarCraft. *IEEE Transactions on Computational Intelligence and AI in games*, *5*(4), 293-311.
27. Tappe, A., & Luhby, T. (22). Million Americans have filed for unemployment benefits in the last four weeks. *CNN Business. Retrieved from https://www. cnn. com/2020/04/16/economy/unemployment-benefits-coronavirus/index. html April*, *24*, 2020.
28. Leong, B. & Jordan, S.(2020). Artificial intelligence and the COVID-19 pandemic.
29. Marr, B. Coronavirus: How artificial intelligence, data science, and technology is used to fight the pandemic. Retrieved 30th March 2020. [
30. Heaven, W. (2020). AI could help with the next pandemic-but, not with this one.
31. Buheji, M., & Ahmed, D. (2020). Foresight of Coronavirus (COVID-19) opportunities for a better world. *American Journal of Economics*, *10*(2), 97-108.
32. Wakefield, J(2020). Coronavirus: AI steps up in battle against covid-19.
33. Katz. L(2020). Coronavirus care at one hospital got taken robots.
34. China's first intelligent cabin hospital delivered in Wuhan with robots offering 24/7 service, Mar 2020.
35. Hollister, M(2020). AI can help with the covid-19 crisis - but the right human input is key.
36. Petropoulos, G((2018). The impact of artificial intelligence on employment. Praise for Work in the Digital Age.
37. The British Academy(2018). The impact of artificial intelligence on work.
38. NDTV Offbeat Desk. (2018) Amazon boss Jeff Bezos walks his robot dog. It can even open doors.
39. Donald E. Knuth(1989). The TEX Book. Addison-Wesley, 15th edition, 1989.

40. Smith, A & Jones, B(1999). On the complexity of computing. *In A. B. Smith-Jones, editor, Advances in Computer Science.* 555–566.

41. Lamport, L. (1986). LaTEX: User's Guide & Reference Manual.