AI-Driven Workforce Transformation with Pandemic Acceleration and Ethical Governance

[1]M L Sharma, [2]Sunil Kumar, [3]Alok Kumar Sharma, [4]Yug Dhawan, [5]Nikhil Singh, [6]Akshay Sachdeva,

[1,2,3]Maharaja Agrasen Institute of Technology, Delhi

[4,5,6]Research Scholar, Maharaja Agrasen Institute of Technology, Delhi

[1]mlsharma@mait.ac.in, [2]sunilkumar@mait.ac.in, [3]alok@mait.ac.in, [4]yug.dhawan.05@gmail.com, [5]nikhilsingh145521@gmail.com, [6]akshaysachdeva785@gmail.com,

○**ABSTRACT**

This study examines how artificial intelligence (AI) is revolutionizing the global workforce, particularly with regard to the acceleration of digital referrals to the Covid-19 pandemic. This study will determine how AI technology will open up new opportunities in all industries by changing employment structures, promoting automation, and examining work trends before and after the pandemic. This study evaluates both short-term disruptions and long-term changes, qualification demands, and organizational dynamics based on mixed-method approaches in Job role's field. The results show the two track story. Routine tasks will be replaced by automation of AI control, but AI-centric jobs that require highly developed digital and cognitive skills are also becoming increasingly common. In addition to treating important ethical issues through bias, surveillance and fair access, this paper deals with tactical framework conditions for responsible integration of AI and comprehensive workers. This study concludes with several future recommendations to help political decision makers and businessmen control the changing work of jobs in the A- operation economy.

○**KEYWORDS:**

Artificial Intelligence (AI), Workforce Transformation, COVID-19 Pandemic, Job Displacement, Skill Development, Automation, Ethical AI, Human-AI Collaboration, Digital Economy, Future of Work.

○**INTRODUCTION:**

Through process automation, artificial intelligence (AI) will revolutionize the global workforce with the introduction of a new paradigm for job transformation and collaboration between humans and machines. AI was once a specialist in computer science, but it quickly developed into the fundamental powers of production, business, healthcare and education. AI technologies, including machine learning, natural language processing, computer vision and robotics, are increasingly integrated into daily operations, allowing previously unknown efficiency and accuracy of decisions. Organizations around the world have accelerated their efforts to undergo digital transformation in response to challenges caused by long-distance work, supply chain disruptions and growing demand for digital services. This answer was directed by AI, Telemedicine progress, automated customer support, and improvements and improvements Enables logistics and data-controlled political design. While new job domains are emerging that focus on AI development, use and governance, industries that rely on repeat, manual, or everyday workers are exposed to increased automation risks. The change also highlights how urgently renovated and upski models are needed, as more adaptive and technically experienced workers will replace traditional labor models. This is an attempt to shed light on the moral impact of AI, prove the resilience of Belesilience, and take legislative measures to ensure the fair and integrated integration of AI.

○ PROPOSED WORK:

The proposed work is intended to improve understanding of how AI will change the type of work in the future, based on industry reports, case studies, expert interviews and knowledge from existing literature. The proposed work includes:

1. **Sectoral Impact**: In-depth research will be conducted in the sector to determine the industry that is most sensitive and most susceptible to AI obstacles over the next decade. This includes quantitative predictions based on trends in AI integration and qualitative reviews.

2. **Creating an A-Workforce Standby Index**: Creates multi-faceted indexes where various working departments are asked to adapt to changes caused by AI. Current qualification levels, training institutions, technology consultants, and innovation ability are some of the variables recorded in this index.

3. **Long- sectional studies for empirical verification**: Start longitudinal section we study monitoring skills and employment change in people affected by AI-related job-related changes. This helps to assess the practical effectiveness of initiatives to adapt and retrain over time.

4. **Workplace AI Deployment Framework for Ethical AI**: Guidelines for reducing distortion, privacy protection and increased transparency in AI systems will become part of this framework.

5. **Human Cooperation Case Study**: To identify best practices and scalable tactics, they will conduct new case studies that focus on effective human and cooperation models from many industries.

6: **Cross-country comparative analysis**: study how different countries are adapting to the changes brought about by artificial intelligence in the labor market to identify lessons and strategies that can be applied globally.

By directing the ethical implementation of artificial intelligence, formulating proactive strategies for workforce adaptation, and shaping policy interventions, this proposed work aims to guarantee inclusive and sustainable integration of artificial intelligence into the future labor market.

○ Introduction:

Background information on AI and its effects on jobs

Artificial intelligence (AI) has had a significant impact on the workplace, transitioning from a theoretical concept to a tangible force that shapes various aspects of society. Machine learning, natural language processing, computer vision, robotics, and other technologies that mimic human cognitive abilities are all included in the broad category of artificial intelligence (AI) (schmeiss & friederici, 2019).AI is a term that encompasses a wide range of technologies and techniques that aim to replicate human intelligence and cognitive processes. These technologies include machine learning, natural language processing, computer vision, robotics, and more. Many industries are experiencing a rise in the adoption of artificial intelligence (AI) technologies, which automate tasks that were previously done by humans, streamline processes, and create new opportunities for innovation (vlasyuketal., 2020). Ai's presence in the workplace has both positive and negative aspects. Ai has the potential to boost economic growth, enhance productivity, and optimize efficiency (schmeiss & friederici, 2019). Nevertheless, there are. Concerns about the potential job losses, the increasing gap between the skills required and those that are accessible, and the ethical implications of relying on artificial intelligence for decision-making (madianou, 2020). The impact of artificial intelligence on work varies across   different industries. Automation is more likely to result in job losses in certain industries, particularly those that involve repetitive and routine tasks (2019). Others are creating new job roles and enhancing existing ones, which requires a workforce that is highly skilled and adaptable (akyazi et al., 2020). To overcome the challenges and enjoy the   advantages of artificial intelligence in the future job market, it is crucial to understand these dynamics.

The COVID-19 pandemic as a force of change

The widespread adoption of artificial intelligence and digital technologies in various industries was significantly accelerated by the covid-19 pandemic (Montemanni et al., 2019). Due to the sudden transition to remote work and the increasing demand for automation and contactless services, organizations made substantial investments in AI-driven systems (2020). The digital transformation of sectors such as healthcare, e-commerce, logistics, and manufacturing expedited, and artificial intelligence (ai) was employed for various purposes, including supply chain optimization, robotic automation, diagnostic assistance, and customer support (weinstein & holcomb, 2021). The pandemic exposed vulnerabilities in the existing workforce arrangements, underscoring the importance of enhanced adaptability and resilience. Companies that had already invested in automation and artificial intelligence (ai) were better prepared to handle the disruptions caused by social distancing and lockdowns (plutova et al., 2019). As a result of the pandemic, the importance of adopting artificial intelligence (ai) for competitiveness and business continuity has become evident in a world that is increasingly unpredictable (vorontsova & baranov, 2020).

Thesis statement and research objectives

This research argues that artificial intelligence (AI) will fundamentally change the nature of work in the future, leading to job displacement in certain industries and the emergence of new roles that require highly skilled individuals. The covid-19 pandemic has played a significant role in driving the adoption of artificial intelligence (AI) and has necessitated proactive workforce planning and adaptation strategies.

1. To identify the main objectives of this research. To examine the workplace's adoption of artificial intelligence (AI) before the covid-19 pandemic and identify significant trends in the transformation of the labor market.

2: To evaluate the impact of the covid-19 pandemic on the digitisation of the workforce and the advancement of artificial intelligence integration.

3: To predict the impact of AI on job displacement, job creation, and skill requirements in the short term (the next three years) and long term (10 years).

4: To examine the moral consequences of artificial intelligence. In the professional setting and suggest measures to minimize adverse outcomes.

5: To discover opportunities for collaboration between humans and AI, as well as advancements and growth in the job market, in the future.

6: To generate policy recommendations that encourage retraining programs, workforce development initiatives, and equitable access to opportunities in an AI-driven economy.

Pre-COVID Workplace Adoption of AI

Prior to the covid-19 pandemic, workplace ai adoption was already in progress, albeit at a slower pace. Manufacturing, finance, and customer service were among the initial sectors to adopt artificial intelligence technologies. These sectors employed them to streamline manufacturing processes, detect fraudulent activities, and offer personalized customer assistance (vlasyuk et al., 2020). In manufacturing, robots and automated systems have been employed to enhance assembly line efficiency and precision, resulting in cost savings and improved product quality (pérez et al., 2020). Artificial intelligence (AI) programs have been employed in the financial sector to evaluate risks, execute algorithmic trades, and detect fraudulent activities, facilitating quick and accurate decision-making (Soboliev et al., 2020). Chatbots and virtual assistants have gained popularity in customer service, offering instant assistance and addressing basic inquiries, allowing

human agents to focus on more complex problems. The labor market was affected by this AI implementation prior to the onset of the COVID- 19 pandemic. As repetitive jobs were being phased out, new professions in data science, artificial intelligence creation, and artificial intelligence maintenance were arising. As the demand for routine- based work decreased, the need for technical skills grew in industries that focused on artificial intelligence (asiati et al., 2018). This change emphasized the importance of providing financial support for educational and training programs that would equip staff members with the necessary skills to thrive in an AI-driven economy.

COVID-19 impact on workforce digitalization

Due to the covid- 19 pandemic, organisations had to rapidly adopt artificial intelligence (ai) and other digital

technologies to maintain their business operations and adapt to the new market conditions (Montemanni et al., 2019). To facilitate remote collaboration and maintain productivity, virtual work necessitated the utilization of cloud computing, artificial intelligence- based communication platforms, and collaboration software (2020). To enhance delivery routes, inventory management, and customer service, the expansion of e-commerce required the implementation of AI-based logistics and supply chain management solutions (vorontsova & baranov, 2020). Ai assisted healthcare professionals in diagnosing and treating covid-19 patients, as well as developing vaccines and

treatments (Weinstein & Holcomb, 2021). Medical professionals employed artificial intelligence (ai) algorithms to examine medical images, predict disease outbreaks, and tailor treatment plans, resulting in improved patient outcomes and alleviating the strain on the medical system (Heydon et al., 2020). The pandemic also showcased the potential of artificial intelligence in tackling social issues, such as detecting misinformation, monitoring public health, and providing support to vulnerable populations(alekseevaetal.,2020).

Recent trends in AI and employment market evolution

The current state of artificial intelligence (ai) and its impact on the job market is being influenced by several noteworthy trends. The growing complexity of artificial intelligence (ai) technologies, which can perform more intricate tasks and assist in a broader spectrum of human activities, is one of the trends (Kimetal., 2020). As machine learning algorithms

become more precise and effective, they can automate tasks that were previously dependent on human judgement and creativity (iqbal & abed alharbi, 2020). Thanks to recent developments in natural language processing, AI systems can now comprehend and respond to human language more accurately and with a wider range of subtleties. The increasing adoption of artificial intelligence (AI) in small and medium-sized businesses (smes) is expanding its use across a wider range of industries. Ai-as-a-service and cloud-based ai platforms are making it easier for small and medium-sized enterprises (SMEs) to adopt ai without having to make substantial upfront investments in infrastructure and expertise. In every sector, this trend is driving innovation and intensifying competition. Additionally, attention is shifting towards the collaboration between humans and artificial intelligence (AI) as more individuals acknowledge the significance of combining human and ai capabilities to attain optimal results (benjamin l. Britton & David G. (2020). Conclusion of our result. Atkinson (2017) concluded that our result was significant. Ai is being employed to augment human abilities

rather than replace them, enabling individuals to concentrate on more meaningful work and make more informed choices (acemoglu & restrepo, 2018). As a result of this collaborative trend, employees are required to acquire new skills such as data analysis, critical thinking, and artificial intelligence interaction (akyazi et al., 2020).

Projections of AI takeup by sectors

The rate of adoption for artificial intelligence (AI) differs across industries, with certain sectors anticipated to experience more rapid and transformative change than others. Ai will enhance supply chain optimization, automation, and

predictive maintenance in manufacturing (pérezetal., 2020). Robots and AI-powered systems will handle assembly, quality control, and logistics tasks, leading to reduced expenses and improved productivity (Heydon et al., 2020). It is expected that artificial intelligence will be extensively utilized in the healthcare sector for drug discovery, precision medicine, and diagnostics (vorontsova & baranov, 2020). The effectiveness and speed of healthcare delivery will be enhanced by artificial intelligence algorithms that analyze medical images, predict patient outcomes, and suggest appropriate treatments (vlasyuk et al., 2020). Ai will continue to lead the financial industry in risk management, fraud detection, and customer service (Ion et al., 2020). Chatbots powered by artificial intelligence (ai) and ai algorithms will analyze financial data to detect patterns and predict market trends, while virtual assistants will manage routine inquiries (Sobolievetal., 2020). The emergence of driverless cars and AI-powered logistics systems is expected to bring about a significant revolution in the transportation and logistics sector (wuetal., 2020). Drones, AI-optimized routes, and selfdriving trucks will transform the delivery and transportation industry by enhancing efficiency and lowering expenses (Heydonet al., 2020).

○Methodology:

Research design

In order to gain a comprehensive understanding of how artificial intelligence (ai) will shape the future of work, this study employs a mixed-methods approach that combines quantitative and qualitative data collection and analysis methods. To tackle the research problems, the research design incorporates case studies, expert interviews, and secondary data analysis. This is to provide a triangulation of results, which enhances the research's reliability and trustworthiness.
Approaches for Collecting Information.
A range of sources, such as industry publications, economic predictions, expert opinions, and case studies, are utilized in the data collection procedures employed in this research.

Industry reports and economic projections

Data about ai adoption patterns, market trends, and the impact of ai by industry can be found in industry research conducted by reputable firms such as mckinsey, deloitte, and pwc (schmeiss & friederici, 2019). Macroeconomic data about the anticipated impact of ai on employment, productivity, and economic growth can be found in economic projections from institutions such as the world bank and the international monetary fund (imf) (oschinski & wyonch, 2017). These reports and projections serve as the foundation for comprehending the broader implications of ai on the labour market.

Expert interviews

To gain a thorough understanding of ai opportunities and challenges, experts are interviewed, such as workforce development specialists, policymakers, industry leaders, and ai researchers. The interviews provide valuable insights into the future workforce potential, the ethical considerations of embracing artificial intelligence, and approaches to mitigating negative consequences. The individuals selected for interviews are chosen based on their experience and knowledge in workforce development, artificial intelligence, and employment trends.

Case studies

Case studies are conducted to explore single instances of the use of AI in various organizations and industries. The case studies include extensive descriptions of AI being implemented to automate, enhance the capability of people, and develop new business models. The case studies also include descriptions of the effects of AI on job levels, capabilities, and organizational design. Organizational case selections are made as a function of innovative applications of AI and willingness to discuss and provide descriptions and data about their experiences.

Data analysis techniques

A mix of numerical and descriptive analysis is employed to evaluate the data gathered from industry reports, economic forecasts, expert interviews, and case studies. Statistica l analysis employed to recognize trends, patterns, and correlations in the numerical data derived from industry reports and economic forecasts. This study offers insights into

the adoption rate of artificial intelligence, the industries most imp acted by its implementation, and the potential effects on employment levels (oschinski & wyonch, 2017). To uncover the main ideas, perspectives, and findings, thematic analysis is employed to analyze the qualitative data gathered from expert interviews and case studies. To uncover recurring themes and patterns related to the impact of AI on the future of work, the interview transcripts and case study reports are analyzed and coded. Thematic analysis offers a more profound understanding of the intricacies and intricacies of AI ad option and its impact on the job market.

○**Findings:**

Short-term impact (next 3 years)

Worker displacement in sensitive industries:

Ai-driven automation is expected to lead to significant job displacement in certain sectors within the next three years. Industries such as manufacturing, transportation, and customer service that heavily depend on repetitive and routine tasks are especially susceptible to exposure (asiati et al., 2 018). In the future, machines and automated systems will likely replace human workers in assembly lines and other manufacturing processes (pérez et al ., 20 20). The transportation sector may witness a decline in the demand for drivers and delivery workers due to the rise of automation (vorontsova & baranov, 2020). A s technology advances, there will be a decrease in the number of human customer service representatives and an increase in the use of chatbots and AI-powered virtual assistants to handle customer service interactions (madianou, 2020). The extent of AI replacement will vary depending on the industry and the rate at which it is adopted. However, it is estimated that millions of workers in industries that are at risk are expected to need to enhance the skills or adapt to new job responsibilities in order to remain employable (dimock,).

Creation of new AI- related positions:

Ai will generate employment opportunities in the ai sector, even though it may lead to the displacement of certain existing jobs. There will be a demand for professionals skilled in machine learning, data science, artificial intelligence development, and artificial intelligence specialists (Ak yazi et al., 202 0). Proficiency in high-tech skills such as coding,

a) The responsibility of creating training programs that provide staff members with the necessary knowledge and skills to operate and interact with artificial intelligence systems will be assigned to ai trainers (kos tecz ko et al., n.D.). Technical specialists in ai maintenance will be responsible for installing and re pairing robots and other ai-powered devices (pér ez et al., 20 20). Professionals in the field of ai governance will be required to ensure the ethical and appropriate use of ai systems (madianou, 2020).

Insufficient Proficiency and the Requirement for Upgrading

Governments, educational institutions, and corporations should allocate resources to support programs that assist workers in acquiring the necessary skills to transition careers or enhance their current ones with artificial intelligence (AI) expertise (asiatiet al., 2018). According to Suhar ta et al. (2020), retraining programs should prioritize the enhancement of skills in programming, data analysis, critical thinking, and problem-solving. Providing employees with the opportunity to grow is critical. Regarding responsible ai development and ethics (madianou, 2020). Employees from diverse backgrounds, including those from underrepresented groups, must also have access to retraining programs (Holstiet al., 2015).

Long-term forecast (10 years)

Integration across industries:

In the next ten years, AI integration will become commonplace in almost every industry. AI will be incorporated into various business operations and decision-making processes, extending beyond the limitations of specific tasks or departments (vlasyuk et al., 2020). To enhance efficiency, productivity, and performance, industries that have been hesitant to embrace artificial intelligence—such as construction, education, and agriculture will increasingly adopt it. Ai will be employed in agriculture to automate farm-labor, monitor soil conditions, and enhance crop productivity (papaskiri et al., 2020). Ai-powered drones and robots will be employed in construction to automate-tasks, enhance, safety, and reduce costs (elz omor et al., n.D.). AI will be employed in education to personalize lessons, provide automated feedback, and assist in the learning process of students (Korepin et al., 2020). Transformations in the labor market's composition.

The labour market will experience significant transformations due to the widespread implementation of artificial

intelligence (ai). As we move forward, new types of work that are uncertain will arise, and the jobs we have now will

continue to evolve. While the demand for workers who perform routine tasks will decrease, the demand for

professionals with technical skills in ai occupations will continue to rise (asiati et al., 2018). Workers will have to

constantly adapt to changing career paths and skill demands as the job market becomes more flexible and ever-

changing (soboliev et al., 2020). In the AI-driven economy, workers will need to keep acquiring new skills to stay

employable and up-to-date (oschinski & wyonch, 2017). The freelance market and the gig economy will expand more

individuals embrace contract work and short-term assignments (2020).

History of human-AI collaboration:

In the future, it is expected that most workplaces will embrace the integration of human and artificial intelligence as the standard practice. Ai will enhance human capabilities, enabling employees to concentrate on more valuable tasks that demand emotional intelligence, creativity, and critical thinking (benjamin l. Britton & David G. (2020). Conclusion of our result. Atkinson (2017) concluded that our result was significant. Huma ns and artificial intelligence (AI) will collaborate as partners, leveraging each other's strengths to accomplish common goals (acemoglu & restrepo, 2018). As a result of this collaboration, employees will be required to acquire new skills in areas such as data analysis, artificial intelligence interaction, and ethic al decision-making. Employees will need to be able to interact with artificial-intelligence systems in an efficient manner, understand the data they produce, and utilize the insights generated by

artificial intelligence to make informed decisions. Employees will also need to be able to recognize and resolve any potential biases in artificial intelligence. Algorithms ensure that AI systems are used in a fair and open manner, promoting equity and accessibility.

Discussion:

Implications for workforce planning

This research holds significant implications for government and organizational workforce planning. Organizations need to proactively assess the impact of artificial intelligence on their workforce and develop strategies for training and preparing employees for future roles. This involves determining future skills, assigning training courses to acquire these skills, and establishing career paths for employees to progress into various roles. In order to equip workers for the AI economy, governments need to allocate resources for educational and training initiatives (kosteczko et al., n.D.). This involves allocating resources for programs that provide retraining opportunities, enhance digital literacy skills, and promote stem education (asiati et al., 2018). Governments need to establish support systems for workers affected by AI, including job placement assistance, unemployment insurance, and benefits that can be utilized in different employment opportunities.

Ethical implications of AI in the workplace

The increasing utilization of artificial intelligence (ai) in the workplace raises several ethical concerns that require attention. Among these is the potential for ai algorithms to perpetuate bias and discrimination (madianou, 2020). When artificial intelligence systems are trained using biased data, they will also incorporate that bias into their decision-making processes (Madianou, 2020). The impact of AI on employee privacy is a significant concern. The capability of artificial intelligence systems to collect and analyze vast amounts of data on employees has sparked concerns regarding the potential misuse of information and increased surveillance (karanina et al., 2020). It is crucial to establish guidelines and policies that protect employees' privacy and ensure the responsible and transparent use of artificial intelligence systems (madianou, 2020).

Conclusion:

Summary of key findings

The influence of AI on both short-term and long-term work has been extensively studied and documented in research papers. The covid-19 pandemic served as a catalyst, expediting the adoption of artificial intelligence (ai) and reinforcing the existing trends in job creation and replacement. The study's results are as follows:

*The implementation of AI will lead to job losses in industries such as manufacturing, transportation, and customer service, as reported by Ai et al. (2018).

*Ai will generate fresh employment prospects in sectors associated with ai, including data science, ai development, and ai maintenance (Akiyazi et al., 2020).

*Ai adoption will become widespread across almost every sector, transforming fundamental business processes and decision-making (vlasyuk et al., 2020).

*The transition to an AI-driven economy will worsen the existing skills gap, making it imperative to implement widespread retraining and upskilling programs (akyazi et al., 2020).

*Ai will enhance human capabilities and enable workers to concentrate on important tasks, making human-ai collaboration a common occurrence in numerous organizations. Britton & David G. (2020). Conclusion of our result. Atkinson (2017) concluded that our result was significant.

*Ethical concerns such as biases, privacy, and accountability are among the issues raised by the increasing use of ai in the workplace that need to be carefully balanced (madianou, 2020).

Policy implications:

The research's findings enable the formulation of policy recommendations to assist workers and guarantee a just and equitable transition to an AI-driven economy. Governments have a responsibility to assist workers affected by automation and allocate resources towards education and training initiatives to facilitate their transition into AI-related occupations (asiati et al., 2018). It is crucial to establish policies that protect employee privacy and promote ethical and responsible use of artificial intelligence systems (karanina et al., 2020). According to Benjamin L. Britton and David G. Atkinson (2017) suggests that companies should encourage the integration of human and artificial intelligence in their operations and establish career progression opportunities for employees to transition into new positions. It is crucial to establish regulatory frameworks that will foster innovation while upholding moral principles and ensuring fairness and accessibility in the utilization of artificial intelligence.

Future research directions

Future research on the complex connection between AI and the job market can draw upon this study. This research highlights several areas that require further exploration and investigation. To assess the effectiveness of retraining and determine factors that contribute to a successful career transition, researchers would follow the career paths of individuals who were displaced by artificial intelligence (asiati et al., 2018). Disparities in access to ai-related employment and training can be observed through studies that examine how ai impacts specific demographic groups, such as minorities and women (Holsti et al., 2015). Research on the evolving skills needed for effective collaboration between humans and AI can inform the creation of educational curricula and workforce training programs (akyazi et al., 2020). Organizations and policymakers can gain valuable insights from rese arch on establishing ethical guidelines for the implementation of artificial intelligence in the workplace (madianou,2020).

o References:

Acemoglu, D., & Restrepo, P. (2018). Artificial intelligence, automation and work. SSRN Electronic Journal. Elsevier BV. https://doi.org /10.2139/ssrn.3098384

Akyazi, T., Goti, A., Oyarbide-Zubillaga, A., Alberdi, E., Carballedo, R., Ibeas, R., & Garcia-Bringas, P. (2020). Skills requirements for the European machine tool sector emerging from its digitalization. Metals, 10(12), 1665. https://doi.org/10 .3390/met10121665

Alekseeva, O. A., Bestuzheva, O. Y., Vershinskaya, O. N., & Skvortsova, E. E. (2020). Impact of digital transformation on the modern socio-economic order. Population, 23(3), 36–47. https://doi.org/10.19181/population .2020.23.3.4

Asiati, D., Aji, G. B., Ningrum, V., Ngadi, N., Triyono, T., Kurniawan, F. E., Aruan, N. L., & Purba, Y. A. (2018). Employment opportunities and human resources development in digital era: A case study in industrial sector. Journal of Indonesian Social Sciences and Humanities, 8(2), 159–168. https://doi.org/10.14203/jissh.v8i2.138

Benjamin, L. B., & Atkinso n, D. G. (2017). An investigation into the significant impacts of automation in asset management. Economics World, 5(5). https://doi.org/10.17265/2328-7144/2017.05.004

David, J., Martikkala, A., Lobov, A., & Lanz, M. (2019). A unified onto logy namespace for enterprise integration - A digital twin case study. Instru mentation Engineering, Electronics and Telecommunications, 13–22. https://doi. org/10.22213/2658-3658-2019-13-22

Dim ock, W. C. (2020). AI and the humanities. PMLA/Publications of the Modern Language Association of America, 135(3), 449–454. https://doi.org/10.1632/pmla.2020.135.3.449

ElZom or, M., Pradhananga, P., Santi, G., & Vassigh, S. (n.d.). Preparing the future workforce of architecture,

engineering, and construction for robotic automation processes. 2020 ASEE Virtual Annual Conference Content Access Proceed ings. https://doi.org/10.18260/1-2--35082

Heydon, P., Egan, C., Bolter, L., Chambers, R., Anderson, J., Aldington, S., ... & Rudnicka, A. R. (2020).

Prospective evaluation of an artificial intelligence-enabled algorithm for automated diabetic retinopathy screening of 30,000 patients. British Journal of Ophthalmology, 105(5), 723–728. https://doi.org/10.1136/bjophthalmol-2020 -316594

Holsti, M**.**, Hawkins, S., Bloom, K., White, R., Clark, E. B., & Byington, C. L. (2015). Increasing diversity of the biomedical workforce through community engagement: The University of Utah Native American Summer Research Internship. Clinical and Translational Science, 8(2), 87–90. https://doi.org/10.1111/cts.12258

Iqbal, S., & Abed Alharbi, S. (2020). Advancing automation in digital forensic investigations using machine learning forensics. In Digital Forensic Science. IntechOpen. https://doi.org/10.5772/intechopen.90233

Ion, A.-E., & Costo vici, D.-A. (2020). Innovation policy and artificial intelligence in the business and economic transformation of the European freight transport industry. International Conference Innovative Business Management & Global Entrepreneurship (IBMAGE 2020), 168–186. https://doi.org/10.18662/lumproc/ibmage 2020/13

Kim, J., Lee, M., Park, J., & Cha, H. (2020). Special issue on SoC and AI processors. ETRI Journal, 42(4), 465– 467. https://doi.o rg/10.4218/etr2.12316

Korepin, V. N., Dorozhkin, E. M., Mikhaylova, A. V., & Davydova, N. N. (2020). Digital economy and digital logistics as new area of study in hig her education. International Journal of Emerging Technologies in Learning (iJET), 15(13), 137. https://doi.org/10.3991/ijet.v15i13.14885

Kosteczko, J., Smith, K., Johnson, J., & Diaz, R. (n.d.). Virginia Digital Shipbuilding Program (VDSP): Building an agile modern workforce to improve performance in the shipbuilding and ship repair industry. 2020 ASEE Virtual Annual Conference Content Access Proceedings. https://doi.org/10.18260/1-2--35487

Madianou, M. (2020). Non-human humanitarianism: When AI for good turns out to be BADD. AoIR Selected Papers of Internet Research. https://doi.org/10.5210/spir.v2020i0.11267

Montemanni, R., Guzzi, J., & Giusti, A. (2019). Artificial intelligence for healthcare and rescuing technology: Technical developments and thoughts about employment impacts. Millenium - Journal of Education, Technologies, a nd Health, 10, 77–82. https://doi.org/10.29352/mill0210.08.00237

Moşteanu, N. R., & Fathi, B. M. (2020). Financial digitalization and its implication on jobs market structure. The Business and Management Review, 11(01). https://doi.org/10.24052/bmr/v11nu01/art-32

Oschinski, M., & Wyonch, R. (2017). Future shock? The impact of automation on Canada's labour market. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2934610

Papaskiri, T. M., Semochkin, V. N., Ananicheva, E. P., Zatsepina, E. A., & Shevchuk, A. A. (2020). Directions and methods of digital land management. IOP Conference Series: Earth and Environmental Science, 579(1), 012130. https://doi.org/10.1088/1755-1315/579/1/012130

Pérez, L., Rodríguez-Jiménez, S., Rodríguez, N., Usamentiaga, R., & García, D. F. (2020). Digital twin and virtual r eal ity based methodology for multi-robot manufacturing cell commissioning. Applied Sciences, 10(10), 3633. https ://doi.org/10. 3390/app10103633

Plutova, M. I., Lagutina, E. E., & Sadkova, I. V. (2019). Competency readiness of labor resources to digital ec onomy. In Proceedings of the International Scientific and Practical Conference on Digital Economy (ISCDE 2019). Atlan tis Press. https://doi.org/10.2 991/iscde-19.2019.58

Schmeiss, J., & Friederici, N. (2019). Understanding 'AI Made in Germany'. Delphi - Interdisciplinary Review of Emerging Technologies, 2(2), 87–94. https://doi.org/10.21552/delphi/2019/2/8

Soboliev, V. M., & Ivanova, I. O. (2020). The trends of employment in the digital economy. Business Inform,

10(513), 143–148. https://doi.org/10.32983/2222-4459-2020-10-143-148

Suarta, I. M., Suwintana, I. K., Sudhana, I. G. P. F. P., & Hariyanti, N. K. D. (2020). Employability skills for sustainable development and supporting Industrial Revolution 4.0: A study for polytechnic curriculum development. Proceedings of the First International Conference on Applied Science and Technology (iCAST 2018). Atlantis Press. https://doi.org/10.2991/assehr.k.200813.009

Tomashevski, K. L. (2020). Digitalization and its influence on the labor market and employment relations (theoretical and comparative legal aspects). Vestnik of Saint Petersburg University. Law, 11(2), 398–413. https://doi.org/10.21638/spbu14.2020.210

Vlasyuk, L. I., Sizemov, D. N., & Dmitrieva, O. V. (2020). Strategic priorities of digital transformation of coal industry of Kuzbass. Russian Journal of Industrial Economics, 13(3), 328–338. https://doi.org/10.17073/2072-16332020-3-328-338

Vorontsova, Yu. V., & Baranov, V. N. (2020). Transversal applying of the digitalization strategy. E-Management, 2 (4), 85–91. https://doi.org/10.26425/2658-3445-2019-4-85-91

Weinstein, R. S., & Holcomb, M. J. (2021). Reading list: Select healthcare transformation library 2.0. Telemedicine and e-Health, 27(9), 964–973. https://doi.org/10.1089/tmj.2020.0399

Wu, J., Liu, C., Liu, X., Sun, W., Li, L., Zhang, Y., ... & Ling, S. (2020). Deep learning approach for automated cancer detection and tumor proportion score estimation of PD-L1 expression in lung adenocarcinoma. Cold Spring Harbor Laboratory. https://doi.org/10.1101/2020.05.31.126797