

EXPLORING THE IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN DECISION-MAKING AND EMPLOYMENT

Anuradh Yadav¹, Ritushree Narayan², Sheetal Choudhary³

¹Assistant Professor, Institute of Education and Research, Mangalayatan University, Aligarh, UP

²Assistant Professor, Faculty of Computing & Information Technology, Usha Martin University, Ranchi, Jharkhand

³Assistant Professor, Department of Computer Science, Himalayan University, Itanagar, Arunachal Pradesh

Email: anuradha.yadav@mangalayatan.edu.in

Abstract:

The rapid advancement of Artificial Intelligence (AI) technologies has brought about transformative changes in various aspects of society, particularly in decision-making processes and employment dynamics. However, alongside these advancements come profound ethical implications that demand careful consideration. This research paper delves into the multifaceted ethical landscape surrounding AI, with a specific focus on its implications in decision-making and employment. Through an interdisciplinary approach, drawing on philosophical frameworks, empirical studies, and real-world examples, this paper aims to illuminate the ethical challenges posed by AI and propose strategies for navigating them responsibly while upholding fundamental human values and promoting societal well-being.

Introduction:

Artificial Intelligence (AI) is increasingly permeating diverse domains of human activity, revolutionizing how decisions are made and work is conducted. However, the integration of AI into decision-making processes and employment landscapes raises complex ethical dilemmas that warrant thorough exploration. This paper aims to navigate the ethical labyrinth of AI, examining its implications in decision-making and employment contexts. By critically analyzing existing literature, ethical theories, and case studies, this paper seeks to shed light on the ethical challenges posed by AI and suggest approaches for addressing them in a manner that upholds human dignity, fairness, and societal integrity.

1. Artificial Intelligence (AI)

Artificial Intelligence (AI) represents a paradigm shift in computing, enabling machines to perform tasks that traditionally required human intelligence. Dating back to the mid-20th century, the concept of AI has evolved from early symbolic systems to the modern era of machine learning and neural networks. At its core, AI encompasses various key concepts such as machine learning, neural networks, deep learning, natural language processing (NLP), computer vision, and robotics. These technologies find applications across diverse domains, including healthcare, finance, transportation, customer service, education, entertainment, and manufacturing. Looking ahead, the future of AI holds tremendous promise for innovation and societal impact. However, it also presents challenges related to ethics, bias, privacy, job displacement, and governance. Addressing these challenges requires interdisciplinary collaboration, responsible development practices, and informed policy-making to ensure that AI technologies benefit humanity while minimizing potential risks. In essence, AI is poised to revolutionize technology and society, ushering in a new era of possibilities and opportunities.

Statement of the Problem: ‘Exploring the Implications of Artificial Intelligence in Decision-Making and Employment’

1. Ethical considerations: The integration of AI into decision-making processes raises questions about fairness, transparency, and accountability, as well as concerns regarding bias, privacy, and autonomy.
2. Societal impacts: AI automation and augmentation have profound implications for employment dynamics, including job displacement, skills mismatch, and socio-economic inequality, posing ethical challenges for policymakers, businesses, and workers alike.
3. Need for ethical discourse: In light of these challenges, there is an urgent need for interdisciplinary dialogue and ethical reflection to navigate the complex ethical terrain of AI, ensuring that its development and deployment align with fundamental human values and promote societal well-being.

2. Objectives of the Research Paper

1. To explore the ethical implications of AI in decision-making processes, considering issues of bias, transparency, and accountability.
2. To investigate the socio-economic impacts of AI on employment dynamics, including job displacement, reskilling imperatives, and ethical considerations in workforce management.
3. To propose strategies for navigating the ethical challenges posed by AI in decision-making and employment, fostering responsible AI governance and ethical decision-making practices.

3. Ethical Implications in Decision-Making

A. Role of AI Algorithms

1. Definition and Function of AI Algorithms in Decision-Making

In the contemporary landscape, AI algorithms play a pivotal role in decision-making processes across various domains, ranging from finance and healthcare to criminal justice and customer service. This subsection provides an in-depth exploration of the definition and function of AI algorithms in decision-making contexts.

a. Definition of AI Algorithms:

- AI algorithms refer to computational procedures or sequences of instructions designed to process data, learn patterns, and generate insights or decisions autonomously or semi-autonomously.
- These algorithms are typically developed using machine learning techniques, including supervised learning, unsupervised learning, and reinforcement learning, to enable systems to make predictions, classify information, or optimize outcomes based on input data.

b. Function of AI Algorithms in Decision-Making:

- AI algorithms serve diverse functions in decision-making processes, depending on the context and objectives of the application.

- In finance, for instance, AI algorithms are employed for algorithmic trading, portfolio optimization, credit scoring, and fraud detection, leveraging historical market data and predictive analytics to inform investment decisions and mitigate risks.
- In healthcare, AI algorithms analyze medical imaging scans, electronic health records, and genomic data to assist clinicians in diagnosing diseases, recommending treatment options, and predicting patient outcomes, enhancing diagnostic accuracy and personalized medicine.
- In criminal justice, AI algorithms are used for risk assessment, sentencing recommendations, and predictive policing, raising concerns about fairness, transparency, and bias in decision-making processes.
- In customer service, AI-powered chatbots and virtual assistants leverage natural language processing (NLP) algorithms to understand and respond to customer inquiries, streamline support operations, and improve user experiences.

c. Ethical Considerations:

- The proliferation of AI algorithms in decision-making raises ethical considerations related to transparency, accountability, fairness, and bias.
- Transparency: The opacity of AI algorithms, particularly in complex deep learning models, can hinder stakeholders' understanding of decision-making processes and impede accountability.
- Accountability: The delegation of decision-making authority to AI systems complicates issues of responsibility and liability, as errors or biases in algorithmic outputs may be difficult to attribute to specific individuals or entities.
- Fairness and Bias: AI algorithms may perpetuate or exacerbate existing biases present in training data, leading to discriminatory outcomes and inequitable treatment of individuals or groups.
- Interpretability: The lack of interpretability or explainability in AI algorithms poses challenges for ensuring that decisions are understandable, justifiable, and aligned with ethical norms and societal values.

2.Examples of AI applications across sectors

A. Role of AI Algorithms

The integration of AI algorithms into decision-making processes has led to transformative applications across various sectors. This subsection provides illustrative examples of AI applications in finance, healthcare, criminal justice, and customer service, highlighting their diverse functionalities and societal impacts.

a. Finance:

- **Algorithmic Trading:** AI algorithms are utilized in algorithmic trading systems to analyze market data, identify patterns, and execute trades automatically at high speeds, leveraging machine learning techniques to optimize investment strategies and capitalize on market inefficiencies.

- **Credit Scoring:** In the banking and lending industry, AI algorithms assess creditworthiness by analyzing individuals' financial histories, credit scores, and other relevant data points, enabling banks and financial institutions to make informed decisions about loan approvals, interest rates, and risk assessment.
- **Fraud Detection:** AI algorithms detect fraudulent activities in financial transactions by analyzing patterns, anomalies, and behavioral indicators indicative of fraudulent behavior, facilitating early detection and prevention of fraudulent transactions, thereby minimizing financial losses and mitigating risks.

b. Healthcare:

- **Medical Imaging Analysis:** AI algorithms analyze medical imaging scans, such as X-rays, MRIs, and CT scans, to assist radiologists in detecting abnormalities, diagnosing diseases, and identifying treatment options, enhancing diagnostic accuracy and patient care outcomes.
- **Clinical Decision Support:** In clinical settings, AI algorithms provide decision support to healthcare providers by synthesizing patient data, medical literature, and clinical guidelines to recommend treatment options, predict patient outcomes, and optimize care plans, thereby improving clinical decision-making and patient outcomes.
- **Drug Discovery:** AI algorithms expedite the drug discovery process by screening large databases of chemical compounds, predicting their pharmacological properties, and identifying potential drug candidates for further development, accelerating the discovery of novel therapies and reducing time and costs associated with drug development.

c. Criminal Justice:

- **Risk Assessment:** AI algorithms assess the risk of recidivism and likelihood of future criminal behavior by analyzing individuals' criminal histories, demographic information, and other risk factors, informing decisions related to pretrial detention, parole, and sentencing recommendations.
- **Predictive Policing:** In law enforcement, AI algorithms analyze crime data, geographic patterns, and social indicators to predict and prevent criminal activities, guiding resource allocation, patrol strategies, and crime prevention initiatives, with implications for public safety and civil liberties.

d. Customer Service:

- **Chatbots and Virtual Assistants:** AI-powered chatbots and virtual assistants interact with customers via text or speech interfaces, answering inquiries, providing product recommendations, and assisting with service requests, enhancing customer engagement, and satisfaction while reducing service costs.
- **Personalized Recommendations:** AI algorithms analyze customer preferences, behavior, and historical data to generate personalized recommendations for products, services, and content, improving user experiences and driving customer retention and loyalty.

These examples illustrate the diverse applications of AI algorithms across sectors, showcasing their potential to optimize decision-making processes, improve operational efficiency, and enhance outcomes in finance, healthcare, criminal justice, and customer service domains.

However, they also underscore the importance of ethical considerations, transparency, and accountability in AI deployment to mitigate risks and ensure responsible use of AI technologies.

B. Biases in AI Systems

1. Discussion of Inherent Biases in AI Systems

AI systems, despite their potential to enhance decision-making processes, are susceptible to inheriting biases present in the data used for training and development. This subsection delves into the nature of these biases and their implications for AI applications.

a. Data Bias:

- AI algorithms learn patterns and make predictions based on historical data, which may reflect societal biases, prejudices, and disparities present in the data collection process.
- Biases in training data, such as underrepresentation or misrepresentation of certain demographic groups, can lead to skewed or discriminatory outcomes in AI decision-making, perpetuating systemic inequalities and reinforcing existing social biases.

b. Algorithmic Bias:

- The design and optimization of AI algorithms may inadvertently encode biases present in the training data, resulting in biased predictions, recommendations, or decisions.
- Algorithmic biases can manifest in various forms, including racial bias, gender bias, socioeconomic bias, and geographic bias, influencing outcomes in areas such as hiring, lending, law enforcement, and healthcare.

c. Feedback Loop:

- Biased outcomes produced by AI systems may exacerbate existing inequalities and perpetuate feedback loops, as biased decisions reinforce and amplify systemic biases in subsequent iterations of the algorithm.
- This feedback loop further entrenches disparities and undermines fairness, equity, and social justice, exacerbating societal divisions and marginalizing already vulnerable populations.

2. Impact on Fairness, Equity, and Social Justice

The inherent biases present in AI systems have profound implications for fairness, equity, and social justice across various domains, exacerbating systemic inequalities and undermining efforts to promote inclusivity and equal opportunity.

a. Fairness:

- Biases in AI systems undermine the principle of fairness by producing unequal or discriminatory outcomes, disadvantaging certain individuals or groups based on protected characteristics such as race, gender, age, or socioeconomic status.
- Fairness considerations in AI encompass concepts such as disparate impact, disparate treatment, and procedural fairness, aiming to ensure equitable treatment and opportunities for all individuals regardless of demographic attributes.

b. Equity:

- The perpetuation of biases in AI decision-making processes reinforces existing disparities and hinders efforts to achieve equity in access to opportunities, resources, and outcomes.
- Equity considerations in AI involve addressing systemic barriers, structural inequalities, and power imbalances that contribute to differential treatment and outcomes, striving to create a more just and inclusive society.

c. Social Justice:

- Biases in AI systems have far-reaching implications for social justice, as they can perpetuate discrimination, marginalization, and exclusion, exacerbating systemic injustices and eroding trust in institutions.
- Social justice considerations in AI encompass efforts to identify, mitigate, and remediate biases in algorithmic decision-making, ensuring that AI technologies uphold ethical principles, human rights, and democratic values.

Biases in AI systems pose significant challenges to fairness, equity, and social justice, highlighting the importance of ethical oversight, algorithmic transparency, and bias mitigation strategies in AI development and deployment. Addressing these biases requires interdisciplinary collaboration, stakeholder engagement, and a commitment to ethical AI governance to ensure that AI technologies contribute to a more equitable and inclusive society.

C. Accountability and Oversight

1. Mechanisms for Ensuring Accountability and Oversight

Ensuring accountability and oversight in the development and deployment of AI systems is essential to mitigate risks, promote transparency, and uphold ethical standards. This subsection examines various mechanisms and frameworks designed to achieve accountability and oversight in AI applications.

a. Regulatory Frameworks:

- Governments and regulatory bodies may implement laws, regulations, and standards to govern the development, deployment, and use of AI technologies, ensuring compliance with ethical principles, legal requirements, and societal norms.
- Regulatory frameworks may include data protection regulations (e.g., GDPR), algorithmic accountability laws, AI-specific regulations, and industry standards for ethical AI development and deployment.

b. Ethical Guidelines and Principles:

- Ethical guidelines and principles provide guiding frameworks for responsible AI development and deployment, articulating ethical considerations, values, and best practices for developers, organizations, and policymakers.
- Initiatives such as the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems, the Partnership on AI, and the European Commission's Ethics Guidelines for Trustworthy AI offer principles and guidelines for ethical AI design and implementation.

c. Ethical Review Boards:

- Organizations may establish internal or external ethical review boards or committees tasked with evaluating the ethical implications of AI projects, conducting risk assessments, and providing recommendations for mitigating ethical concerns.
- Ethical review boards may include multidisciplinary experts in AI, ethics, law, social sciences, and other relevant fields to ensure comprehensive ethical oversight and decision-making.

d. Transparency and Accountability Mechanisms:

- Transparency and accountability mechanisms in AI systems facilitate traceability, auditability, and explainability of algorithmic decisions, enabling stakeholders to understand, scrutinize, and challenge AI outputs and behaviors.

- Transparency measures may include algorithmic impact assessments, model documentation, transparency reports, and mechanisms for user consent, feedback, and recourse.

2. Ethical Responsibilities of Stakeholders

The ethical development and deployment of AI systems require active engagement and ethical leadership from various stakeholders, including developers, policymakers, and users. This subsection elucidates the ethical responsibilities of stakeholders in the AI ecosystem.

a. Developers:

- Developers bear primary responsibility for designing, building, and deploying AI systems that adhere to ethical principles, respect human rights, and mitigate risks of harm.
- Ethical responsibilities of developers include conducting ethical impact assessments, addressing biases and fairness concerns, promoting transparency and explainability, and prioritizing user privacy and data protection.
- Developers should engage in ongoing education and training on ethical AI practices, collaborate with interdisciplinary teams, and adhere to professional codes of conduct and ethical guidelines.

b. Policymakers:

- Policymakers play a crucial role in shaping the regulatory and policy landscape for AI governance, ensuring that AI technologies are developed, deployed, and used in a manner that aligns with societal values, democratic principles, and human rights.
- Ethical responsibilities of policymakers include enacting laws and regulations that promote transparency, accountability, and fairness in AI, fostering international cooperation and coordination on AI governance, and establishing mechanisms for public consultation and oversight.
- Policymakers should engage with diverse stakeholders, including industry, academia, civil society, and affected communities, to develop evidence-based policies that balance innovation and ethical considerations.

c. Users:

- Users of AI systems have a responsibility to critically evaluate and engage with AI technologies, recognizing their potential benefits and risks, and advocating for ethical AI practices and accountability mechanisms.
- Ethical responsibilities of users include demanding transparency and accountability from AI providers, exercising informed consent in data sharing and algorithmic decision-making, and advocating for policies and practices that uphold ethical standards and protect human rights.
- Users should also contribute to ongoing dialogue and education on AI ethics, participate in ethical reviews and assessments of AI systems, and hold stakeholders accountable for ethical lapses or harms resulting from AI deployment.

4. Ethical Implications in Employment

A. Automation and Job Displacement

1. Socio-economic Impacts of AI Automation on Employment

The integration of AI automation into the workforce has profound socio-economic implications, reshaping employment dynamics and labor markets. This subsection examines the multifaceted impacts of AI automation on employment from a socio-economic perspective.

a. Job Displacement:

- AI automation has the potential to automate routine and repetitive tasks across various industries, leading to job displacement and structural changes in the labor market.
- Jobs that involve manual labor, routine cognitive tasks, and data processing are particularly susceptible to automation, resulting in layoffs, redundancies, and shifts in occupational roles and skill requirements.
- The scale and pace of job displacement caused by AI automation may outstrip the creation of new job opportunities, leading to structural unemployment, labor market polarization, and income disparities.

b. Skills Mismatch:

- AI automation reshapes the demand for skills in the labor market, favoring skills that are complementary to AI technologies, such as problem-solving, critical thinking, creativity, and emotional intelligence.
- Workers whose jobs are displaced by automation may face challenges in transitioning to new roles or acquiring the necessary skills to remain employable in a rapidly changing labor market.
- The skills gap between available jobs and the skills possessed by displaced workers exacerbates unemployment and underemployment, contributing to social and economic inequality.

c. Income Inequality:

- The benefits of AI automation are not distributed evenly across society, leading to widening income inequality and exacerbating disparities between high-skilled and low-skilled workers, as well as between capital owners and laborers.
- High-skilled workers with in-demand skills relevant to AI technologies may benefit from increased productivity, higher wages, and job security, while low-skilled workers face greater vulnerability to job displacement, stagnant wages, and precarious employment.
- Income inequality resulting from AI automation undermines social cohesion, exacerbates poverty and social exclusion, and hinders inclusive economic growth, posing ethical challenges for policymakers and stakeholders.

2. Ethical Considerations Regarding Job Displacement and Income Inequality

The ethical implications of AI automation extend beyond economic concerns to encompass broader societal values, including fairness, equity, and social justice. This subsection explores ethical considerations regarding job displacement and income inequality resulting from AI automation.

a. Fairness and Equity:

- AI automation raises questions about the fairness of distributing the benefits and burdens of technological progress, as job displacement disproportionately affects marginalized and vulnerable populations, including low-income workers, minorities, and less-educated individuals.
- Ensuring fairness and equity in the transition to an AI-driven economy requires proactive measures to support displaced workers, promote inclusive education and training programs, and facilitate access to economic opportunities for all individuals.

b. Social Justice:

- AI automation has implications for social justice, as it intersects with broader issues of power, privilege, and rights in society.

- Addressing the ethical dimensions of job displacement and income inequality requires a social justice lens that prioritizes the well-being and dignity of all individuals, particularly those most affected by economic disruption and structural change.
- Social justice considerations call for policies and interventions that promote equitable distribution of wealth, access to education and skills training, worker empowerment, and collective bargaining rights to ensure that the benefits of AI automation are shared equitably across society.

c. Human Flourishing:

- Ethical considerations regarding job displacement and income inequality should be framed within the broader context of promoting human flourishing and well-being.
- Policies and interventions aimed at mitigating the negative impacts of AI automation should prioritize the holistic development of individuals, fostering opportunities for meaningful work, personal fulfillment, and social participation in a rapidly changing economic landscape.

C. Human-Centered Design

1. Importance of a Human-Centered Approach to AI Deployment

Adopting a human-centered approach to AI deployment is essential to ensure that AI technologies are aligned with human needs, values, and aspirations. This subsection underscores the significance of prioritizing human well-being, autonomy, and dignity in the design and implementation of AI systems.

a. Ethical Imperatives:

- A human-centered approach to AI deployment reflects ethical imperatives rooted in respect for human rights, dignity, and autonomy. It acknowledges that AI technologies should serve as tools to augment human capabilities and enhance human flourishing, rather than replace or diminish human agency.
- Prioritizing human values and well-being in AI deployment fosters trust, acceptance, and accountability, mitigating risks of harm, bias, and unintended consequences associated with AI technologies.

b. User-Centric Design Principles:

- Human-centered design principles emphasize understanding the needs, preferences, and perspectives of end-users throughout the design and development process.
- User-centric design principles, such as empathy, inclusivity, and participatory design, guide AI developers in creating intuitive, accessible, and user-friendly interfaces and experiences that empower individuals to interact with AI technologies effectively and autonomously.

c. Ethical Use Cases:

- Human-centered AI deployment prioritizes the development of use cases that address real-world challenges, improve quality of life, and enhance societal well-being.
- Ethical use cases for AI technologies include applications in healthcare, education, accessibility, environmental sustainability, and social services, where AI can contribute to positive social impact and address pressing human needs and concerns.

2. Involvement of Workers in the Design and Implementation of AI Technologies

Engaging workers in the design and implementation of AI technologies is essential to ensure that AI systems reflect the realities, preferences, and aspirations of those directly affected by their deployment. This subsection highlights the importance of worker participation, empowerment, and representation in the development of AI technologies.

a. Co-Creation and Collaboration:

- Worker involvement in the design and implementation of AI technologies entails co-creation and collaboration between AI developers, employers, and frontline workers throughout the development lifecycle.
- Co-creation approaches, such as participatory design workshops, focus groups, and user testing sessions, facilitate dialogue, feedback, and iterative refinement of AI systems based on workers' insights and experiences.

b. Empowerment and Training:

- Empowering workers to contribute to AI design and implementation requires providing them with the necessary knowledge, skills, and resources to engage meaningfully in the process.
- Training programs, workshops, and educational initiatives on AI literacy, digital skills, and human-computer interaction enable workers to understand AI technologies, articulate their needs and concerns, and collaborate effectively with AI developers.

c. Representation and Diversity:

- Ensuring diversity and representation among workers participating in AI design and implementation efforts is crucial to capturing diverse perspectives, needs, and experiences.
- Representation of workers from different demographic backgrounds, job roles, and organizational levels helps uncover nuanced insights, identify potential biases, and promote inclusive design practices that address the needs of all stakeholders.

Conclusion

In conclusion, this research paper has explored the ethical implications of artificial intelligence (AI) in decision-making and employment contexts, shedding light on the complex challenges and opportunities presented by AI technologies. The key findings and insights highlighted throughout this paper can be summarized as follows:

1. Ethical Implications in Decision-Making:

- AI algorithms play a significant role in decision-making processes across sectors, offering opportunities for efficiency, accuracy, and innovation.
- However, inherent biases in AI systems, lack of transparency, and accountability pose ethical challenges related to fairness, equity, and social justice.
- Mechanisms for ensuring accountability and oversight, such as regulatory frameworks, ethical guidelines, and transparency mechanisms, are essential to mitigate risks and uphold ethical standards in AI decision-making.

2. Ethical Implications in Employment:

- AI automation has transformative implications for employment dynamics, leading to job displacement, skills mismatch, and income inequality.
- Socio-economic impacts of AI automation underscore the importance of addressing fairness, equity, and social justice concerns, promoting inclusive economic growth and human flourishing.

- Human-centered design principles and worker involvement in AI deployment are critical for ensuring that AI technologies are aligned with human needs, values, and aspirations, empowering individuals and fostering inclusive and equitable outcomes.

Overall, this research paper highlights the urgent need for ethical reflection, interdisciplinary dialogue, and collaborative action to navigate the ethical labyrinth of AI in decision-making and employment contexts. By prioritizing ethical considerations, promoting transparency and accountability, and centering human values in AI deployment, we can harness the transformative potential of AI technologies while safeguarding against unintended consequences and promoting societal well-being. As we continue to grapple with the ethical challenges posed by AI, it is imperative that stakeholders across sectors work together to foster responsible AI governance and ethical decision-making practices that benefit humanity as a whole.

References:

1. Burrell, J. (2016). How the machine ‘thinks’: Understanding opacity in machine learning algorithms. *Big Data & Society*, 3(1), 1-12. DOI: 10.1177/2053951715622512
2. Floridi, L., & Cowls, J. (2019). A unified framework of five principles for AI in society. *Harvard Data Science Review*, 1(1). DOI: 10.1162/99608f92.8cd550d1
3. Acemoglu, D., & Restrepo, P. (2019). Automation and new tasks: How technology displaces and reinstates labor. *Journal of Economic Perspectives*, 33(2), 3-30. DOI: 10.1257/jep.33.2.3
4. Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, 1(9), 389-399. DOI: 10.1038/s42256-019-0088-2
5. Ford, M. (2015). *Rise of the robots: Technology and the threat of a jobless future*. Basic Books.
6. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). The ethics of algorithms: Mapping the debate. *Big Data & Society*, 3(2), 1-21. DOI: 10.1177/2053951716679679
7. Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company.
8. Jobin, A., Ienca, M., & Vayena, E. (2020). AI ethics. *Journal of the American Medical Association*, 323(14), 1317-1318. DOI: 10.1001/jama.2020.1657
9. Autor, D. H. (2019). Work of the past, work of the future. *AEA Papers and Proceedings*, 109, 1-32. DOI: 10.1257/pandp.20191094
10. Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., ... & Santos, C. (2018). AI4People—An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. *Mind & Machine*, 28(4), 689-707. DOI: 10.1007/s11023-018-9482-5