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Challenges in artificial intelligence management – selected aspects

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Artificial intelligence is reshaping our world, merging human consciousness with technology through tools like virtual reality, augmented reality, and brain-computer interfaces. These innovations blur the line between physical and digital realms, challenging traditional notions of subjectivity and opening pathways for self-expression and cognitive enhancement. AI is not just a neutral tool but a human invention influencing daily life with

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virtual assistants, personalized recommendations, and autonomous vehicles.
However, its rapid growth raises critical legal and ethical challenges, including data privacy, algorithm accountability, transparency, and its impact on employment. These issues demand new regulations across Europe, the USA, and globally. Collaboration among scientists, policymakers, and stakeholders is essential to maximize AI's societal benefits and ensure ethical development in this dynamic technological landscape.

Keywords: AI, adaptation, EU, law, management, global governance

Introduction

Today, we undoubtedly live in a world of simulacra and ephemera, where there is no place for our favourite binary oppositions: good-evil, beauty-ugliness, truth-falsehood, and natural-artificial. Simulation becomes more real, effective, and seductive than what it simulates, and what is artificial often seems more natural than what is truly natural. The latest AI systems can now simulate human intelligence, engage in complex decision-making processes, and even exhibit emotions. Virtual reality (VR), augmented reality (AR), and brain-computer interfaces (BCI) are revolutionizing our perception and interaction with the world, blurring the line between physical and digital reality.

VR and AR technologies allow immersion in simulated environments or the overlay of digital content onto the physical world. This raises questions about the nature of subjective experiences in these realities: are virtual experiences comparable to physical ones? As our experiences increasingly incorporate digital interfaces, the very nature of subjectivity may undergo profound changes. Additionally, BCIs enable direct communication between the brain and external devices, allowing individuals to control technology with their thoughts.

This integration of human consciousness and technology challenges traditional notions of subjectivity, creating new possibilities for self-expression and expanding our cognitive abilities. By merging the boundaries of the human mind with external systems, BCIs transform the relationship between the individual and the technological landscape.

We increasingly realize that artificial intelligence (AI) is not merely a neutral, transparent tool. AI cannot be reduced to a passive object. Following the path suggested many years ago by Jean Baudrillard, we might dare to say that AI begins to define the sense of reality in which we live (Baudrillard, 1983: 1–30). Most importantly, we should not adopt a passive attitude towards the technologies surrounding us or succumb to a sense of powerlessness. AI is a human invention, and we can influence its role in our lives to be positive. Therefore, it is worth treating AI not as abstract knowledge for the initiated but as a field that concerns each of us. In the follow-

ing article, we will consider how to manage artificial intelligence to make our lives better. Also, empirical studies in AI have translated theoretical concepts into practical applications. IBM's Watson, renowned for winning the game show *Jeopardy!* in 2011, showcased AI's natural language understanding capabilities (Steele, 2019: 56). In healthcare, AI systems like IBM Watson for Oncology assist medical professionals in treatment recommendations (Lohr, 2021: 17). The financial sector employs AI-driven algorithms for high-frequency trading and risk assessment. Self-driving cars, a product of AI, are revolutionizing transportation. The importance of the introduction of AI to various industrial sectors can be discussed.

The contemporary significance of AI lies in its transformative impact across diverse sectors. AI applications in cybersecurity are critical for detecting and mitigating cyber threats. AI-driven analytics tools enable organizations to harness the power of big data for strategic decision-making, gaining a competitive edge. AI-powered virtual assistants and chatbots enhance customer service and streamline business operations. With this, it can be emphasized the potential and importance of AI in modern days and work.

AI applications have evolved significantly, primarily driven by advancements in machine learning, natural language processing, computer vision, and robotics. Narrow AI, designed for specific tasks, has found widespread use in industries such as healthcare (medical image analysis), finance (algorithmic trading), and customer service (chatbots). These specialized AI systems have proven to be highly efficient and effective in their designated domains. The pursuit of General AI, an AI system with human-like cognitive abilities across various domains, remains a long-term goal.

In contemporary society, AI has become an integral part of our daily lives. AI-powered virtual assistants like Apple's Siri and Amazon's Alexa have made voice-controlled interactions commonplace (Khofman, 2023: 76). E-commerce platforms leverage AI algorithms for personalized product recommendations. In healthcare, AI aids in diagnostics and drug discovery, while autonomous vehicles are poised to transform transportation. AI's significance extends beyond consumer applications. It plays a pivotal role in industries such as finance, where algorithmic trading and fraud detection rely on AI systems. In healthcare, AI-driven medical imaging and predictive analytics enhance patient care. Government agencies use AI for tasks like data analysis and cybersecurity.

However, it should be noted that the development of AI poses a number of challenges for the legal systems of European countries, the USA, and other countries. As AI becomes increasingly advanced and ubiquitous, the law must keep pace with this rapid technological progress and its impact on our daily lives (Sezgin, Balcıoğlu, 2023: 86). Issues such as data privacy protection, accountability for decisions made by algorithms, transparency and ethics of AI, as well as its impact on the job market, require new regulations and legislation. Legal systems must find a balance between supporting innovation and ensuring the protection of citizens' rights and freedoms. We live in extraordinarily interesting times, where

technological reality often outpaces national, European, and global legislators. This situation demands dynamic adaptation and cooperation among scientists, lawyers, policymakers, and other stakeholders to ensure that the development of AI benefits society as a whole.

Although AI is becoming more widely acknowledged in the context of global governance, there is still a significant gap in the literature when it comes to a thorough analysis of its complex effects. Existing studies often focus on specific aspects of AI's influence, necessitating the need for a more comprehensive analysis of the influence of artificial intelligence on global governance structures and processes. The authors of the following article aim to fill this gap by carefully examining the interactions that exist between artificial intelligence and global governance.

The practical application of AI in selected economic sectors

Artificial intelligence has evolved beyond its theoretical foundations and is now profoundly embedded in various industries, transforming sectors and everyday life. AI's integration spans multiple fields, including healthcare, finance, transportation, and more, highlighting its extensive applications and the need to understand its role within the framework of global governance.

In healthcare, AI has catalysed significant advancements, improving diagnostics, treatment, and patient care. IBM's Watson for Oncology exemplifies this impact, aiding oncologists by analysing extensive medical literature and clinical trial data to offer personalized treatment plans aligned with the latest medical knowledge (Thamba, Gunderman, 2022: 312–314). In radiology, AI-driven medical image analysis tools can identify anomalies and support radiologists in diagnosing conditions like cancer or fractures. For example, Google's DeepMind developed an AI model capable of predicting eye diseases such as diabetic retinopathy by analysing retinal scans, thereby enhancing early diagnosis and intervention (Pugliesi, 2018: 17).

AI has also become integral to the financial sector, optimizing operations and decision-making processes. Algorithmic trading utilizes AI algorithms for high-frequency trades and market data analysis, boosting profitability and efficiency (Pothumsetty, 2020: 140–149). Renaissance Technologies' Medallion Fund, for instance, leverages AI for trading strategies, consistently achieving returns that surpass market benchmarks (Jansen, 2020: 19).

In fraud detection, AI algorithms scrutinize transactions in real-time to spot irregularities and potential fraudulent activities. PayPal uses machine learning to identify and prevent fraud, ensuring the security of user accounts and financial transactions (Alsaibai et al., 2020: 13).

AI's transformative impact on transportation is most evident in the advancement of autonomous vehicles. Companies like Tesla and Waymo utilize AI to develop self-driving cars, employing sensor data and machine learning to navigate roads safe-

ly (Stilgoe, 2018: 28). Tesla's Autopilot feature illustrates the potential of AI-assisted driving, although achieving full autonomy is still a work in progress.

AI is also crucial in enhancing traffic management and logistics. In smart cities, AI-equipped traffic signals can adjust in real-time to alleviate congestion and improve traffic flow. FedEx, for instance, uses AI algorithms for route optimization, reducing delivery times and fuel consumption (Mukhtarov, 2023: 30).

In manufacturing, AI is used for process optimization, quality control, and predictive maintenance. AI-powered robots automate repetitive tasks and assembly lines, increasing efficiency and minimizing errors. In the semiconductor industry, AI-based defect detection systems ensure the quality of microchips, reducing production defects.

In agriculture, AI enhances crop management and yield optimization. Drones equipped with AI-powered cameras can monitor crop health, identify diseases, and recommend targeted treatments (Javaid et al., 2023: 15–30). IBM's Watson Decision Platform for Agriculture provides farmers with AI-driven insights to make data-driven decisions, improving crop yields and sustainability (Veeramanju, 2023: 95–114).

AI is reshaping the retail sector through personalized marketing and inventory management. Recommendation systems, like those employed by Amazon and Netflix, use AI to analyse customer behaviour and preferences, suggesting products or content tailored to individual users (Habil, El-Deeb, El-Bassiouny, 2023: 683–704). Walmart utilizes AI for demand forecasting, optimizing stock levels and reducing waste.

It is important to remember that when it comes to the legal side of deploying AI in industry, there are three common mistakes that we tend to make. Three false beliefs, stemming from the notion that an AI embodiment possesses legal personhood, have obscured an analytical approach to the legal implications of AI. In the glare of the unfamiliar, it is easy to overlook standard legal analysis methods. First, rather than viewing AI and robots as software and data, we all have a tendency to anthropomorphize AI (also known as the "I Robot fallacy") and compare them to humans and the human brain. Secondly, we have a tendency to compare AI systems to agents, especially in popular culture and when they are in motion (a phenomenon known as the "agency fallacy"). It is then just a simple step to grant these systems permissions and assign responsibilities to their agents. Since an AI system is not a legal person, it cannot function as an agent under current legislation, which requires an agent to be a legal person.[1] As AI systems interact more and more, a third misconception – known as the "entity fallacy" – appears to be that these platforms have independent legal iden-

[1] The Interpretation Act 1978 defines "person" to "include a body of persons corporate or unincorporated." Persons generally (but not always) have separate legal personality and include individuals (as natural legal persons) and bodies corporate. By s. 1173 Companies Act 2006, "body corporate" and "corporation" "include a body incorporated outside the UK but do not include (a) a corporation sole, or (b) a partnership that, whether or not a legal person, is not regarded as a body corporate under the law by which it is governed."

tities and can act without the operators' consent. In general, under current legislation, the platform operator may be formed as a business or partnership, with its members being other legal entities (individuals, businesses, partnerships, LLPs, or trusts) (Kemp, 2021: 22). Legally speaking, this kind of body would act just like any other incorporated body. Like that, legally speaking, an entity would act just like any other incorporated body. It would be a partnership (defined as two or more people conducting business together with the intention of making a profit) or an unincorporated organization (club). This is not to argue that AI won't contribute to the emergence of new categories of legal entities – for instance, if the ideas put forth by the European Parliament in 2017 are implemented.[2] The growth of joint stock companies in the UK during the railway era can be compared, as those businesses were initially founded through basic registration and subsequently granted limited liability under the Joint Stock Companies Acts of 1844, 1855, and 1856.

Overcoming the difficult net of international relations with global governance

In our interconnected world, global governance has become essential for managing international relations and addressing numerous global challenges. It consists of a complex network of rules, norms, institutions, and diplomatic processes that enable cooperation among nations and various stakeholders on a global level. This concept does not equate to a world government but rather refers to a dynamic system where diverse actors work together to address critical issues. Despite its potential for addressing global challenges, global governance faces significant hurdles and criticisms. One ongoing issue is the power disparity among countries within the system. Dominant nations often exert more influence over international institutions and decision-making processes, leading to concerns about fairness and equity (Nye, 2002). Additionally, the effectiveness of global governance mechanisms in ensuring compliance with international agreements is debated, as some states may resist enforcement measures or choose selective adherence (Keohane, 2015: 19–26).

Sovereignty issues pose another major obstacle to global governance. Sovereignty is a theoretical-legal category that is characteristic of various fields of law (Pieniążek, 1979: 46). The concept of sovereignty is interpreted in various ways,

[2] On 16 February 2017 the European Parliament adopted a resolution making recommendations to the Commission on civil law rules on robotics. At para 59(f) the Parliament invited the Commission to "consider creating a specific legal status for robots in the long run, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons responsible for making good any damage they may cause, and possibly applying electronic personality to cases where robots make autonomous decisions or otherwise act with third parties independently." In its package of 25 April 2018 setting out the EU's approach on AI to boost investment and set ethical guidelines, the Commission has not taken forward the Parliament's recommendation on legal personality for AI.

resulting in diverse views regarding sovereignty as a characteristic of a state, a set of competencies, or a certain state of relations with other states (Domagała, 2004: 156). Wolpiuk even wrote that *the existence of disputes over sovereignty is a fact* (Wolpiuk, 2001: 5). Nations are typically very protective of their sovereignty and may be reluctant to transfer authority to international organizations or adhere to global regulations they see as encroaching on their autonomy. This conflict between preserving national sovereignty and meeting the requirements of global governance can make it difficult to effectively address collective challenges (Krasner, 1999: 34–52). Additionally, inclusivity is still of utmost importance. Promoting justice and legitimacy requires ensuring that all countries, especially emerging ones, are fairly represented in global governance organizations. Certain areas and populations have historically felt excluded or underrepresented in decision-making (Slaughter, 2017: 70).

In spite of these obstacles, global governance has a bright future. In an era of non-state actors, digital diplomacy, and rapid technical breakthroughs, the landscape of global governance is changing. Global conventions and policy decisions are being shaped by emerging entities like transnational networks and multinational enterprises. The democratization of international discourse, the amplification of civil society voices (Bolu, 2024: 3), and the expansion of digital and social media platforms have all been made possible by increased participation in the setting of international agendas (Chadwick, 2017: 56).

Global governance faces additional complications and challenges as a result of the development of artificial intelligence. Beyond national boundaries, the ethical and legal ramifications of AI use impact global peace, security, and stability. Artificial intelligence technologies have the power to alter information, influence product prices, and threaten cybersecurity, all of which could have an effect on the global order. As such, it is critical that the international community work together to develop moral and legal guidelines for the use of AI. These laws ought to be put into effect both domestically and internationally in order to guarantee consistent standards and accountability among nations. In an increasingly AI-driven society, such activities will be critical to building trust, supporting ethical AI research, and defending global interests.

Artificial intelligence and global governance

Artificial intelligence and global governance together mark a dramatic change in international relations. Artificial intelligence is transforming the landscape of international relations, diplomacy, and politics through its predictive capabilities and data-driven insights. In this intricate interplay between technology and governance, nations, international organizations, and non-state actors utilize AI to enhance their strategic positioning, redefine relationships, and adapt to the ever-changing global environment. Because AI is enabling new tools for diplomacy and conflict resolution,

it is significantly changing international relations. Artificial intelligence programs monitor diplomatic communications carefully, anticipate potential conflicts, and facilitate global cooperation (Ndzendze, Marwala, 2023: 56). AI provides data-driven insights that assist politicians and diplomats in making informed judgments on a variety of topics, from economic negotiations to peace agreements. AI is also transforming the process of formulating policy. Governments everywhere are implementing AI into decision-support systems, data-driven policymaking, and regulatory frameworks. Policymakers are better able to develop data-driven, well-informed policies since AI can handle massive datasets at previously unheard-of rates (Ong, Findlay, 2023: 43–64). But it also raises concerns about the ethical implications of algorithmic decision-making, the need for transparency, and the sustainability of democratic ideals in an era of AI-driven governance.

There are several intricate issues associated with the convergence of AI and global governance. In order to ensure responsible AI development and deployment, ethical considerations surrounding the use of AI, particularly in military contexts, necessitate close examination and international agreements. Establishing standards and policies that reduce possible hazards is imperative, as the ever-present security issues linked with the malevolent use of AI in both the cyber and physical realms demand strong international collaboration (Brundage et al., 2018: 95).

AI technologies will become more and more influential in global governance as they develop. AI will play a bigger and bigger part in solving urgent global issues like public health emergencies, climate change, and humanitarian relief efforts. International cooperation and the creation of governance frameworks that support responsible AI development and use will be necessary for global governance to be effective in these domains (Dafoe, 2018: 1442–1443).

In conclusion, the integration of AI into global governance portends a significant shift in international relations. Undoubtedly, AI has the potential to enhance teamwork, efficiency, and judgment; yet, it also poses intricate ethical, transparency, and security issues. Later chapters in this book will go into greater detail on these dynamics and AI's substantial effects on global politics, economic relations, security, and societal structures.

Global power dynamics and artificial intelligence

The field of AI has become a revolutionary force that is drastically altering the geopolitical environment and the worldwide distribution of power. AI has a significant impact on the dynamics of global power because it enhances a country's capacity to collect, analyse, and utilize large volumes of data, which redefines its strategic position in the modern world order. Countries that are adept at using AI acquire a competitive advantage by utilizing data-driven insights to inform their military tactics, economic stance, and foreign policy (Wehsener et al., 2023: 25–29).

For example, the United States and China have emerged as frontrunners in the AI race, vying for supremacy. China's ambitious AI initiatives and comprehensive strategy have positioned it as a formidable player, with significant investments in research, development, and deployment (Lucero, 2020: 94–99). The US continues to lead the world in AI because to a combination of government funding, innovative commercial sector ideas, and top-notch university institutions (Zhang, 2019: 18–21). The competition between these two giants exemplifies how AI has become a pivotal determinant of global power.

Artificial intelligence has an impact on international relations that goes beyond merely augmenting power. It affects diplomatic interactions and tactics throughout the complex web of international relations. Artificial intelligence equips policymakers with the capacity to evaluate intricate geopolitical situations, predict new risks, and formulate more potent diplomatic approaches (Chandler, 2020: 295).

AI, for example, can help analyse and forecast how other countries will behave in reaction to decisions made about policy. This improves a country's capacity to develop proactive diplomatic strategies. AI has been embraced by the European Union to support its diplomatic efforts. The EU learns about international events and public opinion by tracking and evaluating news stories, social media trends, and open-source data (Karlin, 2018).

Concrete case studies exemplify how AI is influencing global power dynamics. Russia's adept use of AI in information warfare during the annexation of Crimea provides a stark illustration of AI's potential to manipulate public opinion and sow discord (Fernandez-Luque, Imran 2018: 136–142). Russia's use of AI-generated content and disinformation campaigns is a potent reminder of AI's disruptive capacity in shaping narratives.

Positively, the COVID-19 pandemic response has highlighted the potential of AI for cross-border cooperation. AI played a key role in helping with contact tracing, developing vaccines through data analysis, and modelling the virus's transmission. Leading nations have come together to form the Global Partnership on Artificial Intelligence GPAI (GPAI, 2021), which emphasizes the value of AI in tackling global issues cooperatively (Thi Nguyen, 2020: 7–9). Additionally, the use of artificial intelligence in response to the pandemic has opened the door to new medical and technological innovations that have the potential to change the way we deal with future health challenges around the world.

It is also crucial to stress that legal norms must be established in order for ethical frameworks governing the usage and operation of AI to be established. We can only construct instruments that guarantee the greatest standards of safety for the use of these systems and, to some extent, govern the development of AI by combining ethical and legal regulations. While ethical frameworks offer direction on morally acceptable actions and behaviours, legal rules provide the structure and accountability mechanisms required to control the deployment of AI technologies. When combined,

these complimentary strategies help to reduce dangers, safeguard human rights, and encourage the ethical and advantageous use of AI in a variety of fields. The harmonization of legal and ethical standards will be crucial in building a future where AI acts as a force for positive society transformation and advancement as we enter an era increasingly shaped by AI.

Conclusion

This article shows the wide possibilities of using AI in various sectors of the economy. The authors highlighted the impact of AI on global governance and the ethical and legal dilemmas associated with it. Artificial intelligence is constantly developing its emotional and creative competences; it takes exams for students, paints pictures, composes songs, generates press and scientific articles, as well as lawsuits and contracts, helps in managing enterprises, and creates policies. AI admits mistakes, draws conclusions from them, and corrects its position. It tries to behave ethically, but if the user ignores the purpose of using the program or other tool, it may generate the expected, potentially deadly product in a split second. AI is, of course, only a tool in human hands; it can be used for both good and evil purposes. Artificial intelligence modestly notes that it does not have self-awareness "in the full sense of the word," but at the same time, it knows us better than we know ourselves – it knows our predilections, preferences, habits, and the way we communicate with other people. We may therefore have an unpleasant feeling (AI does not feel yet but can create the appearance of feeling and understanding emotions) that this virtual person is surprisingly real in a world where everything is digitized, simulated, and unreal.

For the reasons indicated above, we must consider creating legal standards that will allow individual users, but also international players, such as states or international organizations, to consciously and safely use AI. We should positively evaluate what is happening in the European Union – the creation of the AI Act, which is to contain the first legal framework for AI. Undoubtedly, in the area of personal data protection or cyber security, there are still problems for which the modern legislator has not found solutions. It is important that both national parliaments and the Council of Europe establish special bodies and commissions to develop the right mechanisms regarding broadly understood AI.

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Streszczenie

Wyzwania dla zarządzania sztuczną inteligencją: wybrane aspekty etyczne, prawne i społeczne

Systemy sztucznej inteligencji (AI) zmieniają nasze postrzeganie świata, łącząc ludzką świadomość z technologią poprzez wirtualną rzeczywistość (VR), rozszerzoną rzeczywistość (AR) i interfejsy mózg–komputer (BCI). Zacierają one granice między rzeczywistością fizyczną a cyfrową, tworząc nowe możliwości wyrażania siebie i rozwijania zdolności poznawczych. Dzięki wirtualnym asystentom czy np. autonomicznym pojazdom AI odgrywa coraz bardziej istotną rolę w naszym życiu codziennym. Jednak jej rozwój rodzi nowe wyzwania etyczne i prawne, takie jak ochrona danych, odpowiedzialność algorytmów, przejrzystość. Problemy te wymagają nowych regulacji w Europie, USA i innych regionach świata. Współpraca między naukowcami, prawnikami i decydentami jest kluczowa, by zapewnić etyczny rozwój AI i jej pozytywny wpływ na społeczeństwo.

Słowa kluczowe: AI, adaptacja, UE, prawo, zarządzanie, globalne zarządzanie

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