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Let's Start!

Revolutionizing Arbitration: An In-Depth Analysis Of The Risks And Opportunities Arising From The Intersection Of Artificial Intelligence

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Revolutionizing Arbitration: An In-Depth Analysis Of The Risks And Opportunities Arising From The Intersection Of Artificial Intelligence

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Abstract

This abstract of this study presents a comprehensive examination of the revolutionizing effect of artificial intelligence on arbitration globally, highlighting its potential to revolutionize efficiency, transparency, and procedural flexibility. Despite AI's promising capabilities, the study reveals significant challenges in its integration, particularly the limited adoption among arbitration practitioners. Through a qualitative methodology that includes a literature review, empirical case studies, and expert interviews, the research explores the evolution of arbitration and the advancements in AI technologies. The findings demonstrate how AI can streamline document review, enhance predictive analytics, and optimize case management, while also raising critical ethical concerns such as algorithmic bias and the essential role of human judgment. The article concludes by advocating for the development of robust regulatory frameworks to address these ethical challenges and calls for continued discourse among legal scholars, practitioners, and policymakers. This inquiry contributes to the broader conversation on the future of arbitration, focusing on the necessity for an equitable approach to progress that upholds the principles of accountability, transparency, and fairness.

Keywords: Artificial Intelligence, International Arbitration, Dispute Resolution, Legal Innovation, Regulatory Frameworks, Ethical Implications, Efficiency in Arbitration, Automation, Arbitration Practices, Bias in AI, Human Judgment, Technology in Law, Human Oversight, Predictive Decision-Making

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INTRODUCTION: OVERVIEW OF THE DISCOURSE

"Artificial Intelligence is not merely the future of arbitration; It is the catalyst transforming its present."[1]

In the dynamic and ever-evolving domain of international dispute resolution, the incorporation of artificial intelligence into arbitration practices signifies a transformative shift toward enhanced efficiency, greater transparency, and increased flexibility. As AI tech progress, they are progressively redefining established arbitration procedures, presenting a blend of opportunities and challenges that necessitate thorough scrutiny.[2] Arbitration is also regarded more rapid and less expensive than typical court processes, as well as providing secrecy. However, the progress of artificial intelligence is causing a significant upheaval in the framework of international arbitration. As the digital era grows more severe, the application of AI has spread beyond our daily lives and into the legal field, including international arbitration. It appears that AI has a significant influence on international arbitration and the arbitration procedure. As a result, it is critical to tackle both the purpose and impact of AI in international arbitration by analyzing the pros and cons to evaluate whether there is a significant value to adopting such technologies in the arbitration area.[3]

The rapid advancement of Artificial Intelligence (AI) has transformed it from a mere buzzword into a powerful force. According to a recent study by Goldman Sachs, AI has the potential to automate approximately 25% of all work-related tasks, with the legal sector seeing an even more significant impact, as 44% of tasks in this domain could be automated. This shift marks a major change in the landscape of professional work. However, the uses of AI in the daily activities of arbitration experts remains extremely minimal. According to a 2021, research conducted by White & Case and Queen Mary University of London found that 49% of arbitration practitioners infrequently or hardly utilize AI instruments, such as data analytics or technology-assisted document assessment. This trend persisted similarly in a 2023 study, indicating that AI's integration into arbitration workflows has yet to reach its full potential.[4]

METHODOLOGICAL INSIGHTS: UNVEILING THE RESEARCH PARADIGMS

This article offers a thorough examination of the methodological approaches used to look at how artificial intelligence (AI) may be used in the field of international arbitration. Taking a qualitative stance, the study employs a multifaceted technique that combines theoretical

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[1] Fahad, M. (unpublished) [LL.M thesis, University of Management & Technology (UMT), Lahore, Pakistan].

[2] Xperts Legal (2024). *Arbitration in the age of artificial intelligence: Navigating the intersection of technology and justice*. Available at: https://xpertslegal.com/blog/arbitration-in-the-age-of-artificial-intelligence-navigating-the-intersection-of-technology-and-justice/ [Accessed 1st January 2025].

[3] Columbia Law School (2024). *AI in international arbitration: What is the big deal?* Available at: https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/ [Accessed 1st January 2025].

[4] Kluwer Arbitration (2024). *Navigating the main impacts of artificial intelligence in international arbitration: Insights from the ICC YAAF workshop*. Available at: https://arbitrationblog.kluwerarbitration.com/2024/03/17/navigating-the-main-impacts-of-artificial-intelligence-in-international-arbitration-insights-from-the-icc-yaaf-workshop/ [Accessed 1st January 2025].

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investigation with empirical analysis, providing a comprehensive viewpoint on the topic. To establish a foundation for a sophisticated comprehension of the area, the research starts with a thorough literature analysis that summarizes the most recent academic discussions on AI and arbitration. Key definitions and conceptual frameworks are examined in this review, with special reference to influential thinkers like John McCarthy as well as more recent researchers like Kathleen Paisley and Edna Sussman, whose writings clarify the workings and revolutionary potential of artificial intelligence (AI) in legal contexts.

The essay incorporates case studies that demonstrate the real-world uses of AI in arbitration settings to enhance the study even more. These case studies provide actual instances of how artificial intelligence (AI) techniques, including machine learning algorithms and predictive analytics, are used to improve document review efficiency, expedite evidential procedures, and maximize decision-making results. By looking at various uses, the study not only demonstrates the real advantages of integrating AI but also reveals the difficulties and restrictions that come with using it in arbitration. The approach includes interviews with AI specialists and arbitration practitioners in addition to the case studies, offering qualitative insights into the attitudes, experiences, and moral dilemmas related to the application of AI in arbitration. The study gains depth from this basic data gathering. Shedding light on the practical implications and potential risks associated with AI adoption in legal contexts.

A request for the creation of an all-encompassing regulatory framework that tackles the moral conundrums brought up by AI integration is made in the article's conclusion. To successfully traverse the complexity of AI in arbitration, it highlights the significance of continuous study and cooperative discussion among stakeholders. The paper adds to the larger conversation on arbitration's future in a legal environment that is becoming more and more reliant on technology by using the methodological insights gained from this investigation.

EXPLORING THE GOALS AND THE CONTRIBUTION TO CONTEMPORARY SCHOLARSHIP

The author's work critically examines how artificial intelligence (AI) is being incorporated into international arbitration. This study aims to investigate the inherent hazards as well as the revolutionary potential of implementing AI technology in arbitration procedures. The main goal is to present a thorough examination of the two ways that artificial intelligence (AI) is affecting arbitration: although it has the potential to increase efficiency and transparency, it also presents important issues that need to be resolved. Evaluating the present level of AI usage among arbitration experts is one of the study's main goals. A contradiction is shown by this analysis: whereas AI technologies have advanced significantly, there is still a notable lack of practical use in arbitration. This feature highlights the disparity between AI's prospective capabilities and its current utilization, prompting a critical discourse on the necessary prerequisites for effectively integrating AI within established legal frameworks.

Additionally, by providing a historical perspective on arbitration and its development alongside AI developments, the research advances current scholarship. By examining the history of arbitration and contrasting it with recent advancements in artificial intelligence, the author sheds light on how revolutionary technologies may reshape established industries and promote

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a better comprehension of the relationship between technology and law. This comparative study highlights how AI can completely transform arbitration procedures. This study's importance stems from its in-depth examination of the working relationships between arbitration and AI. In particular, it looks at how AI may improve procedural efficiency in fields like predictive analytics, document review, and data management. The study concurrently tackles significant ethical issues, such as biases present in AI systems and the crucial role of human judgment in legal decision-making. By highlighting these complexities, the study underscores the importance of balancing technological innovation with ethical integrity.

Finally, a critical discussion of the intriguing but uncertain function of AI in arbitration is presented in the author's work. In order to overcome the difficulties presented by this technological advancement, it exhorts legal scholars, practitioners, and policymakers to have meaningful conversations. The study offers insightful information on how to maximize AI's advantages while resolving the moral, legal, and procedural issues that come up in the context of arbitration. This academic contribution deepens our comprehension of how dispute resolution is changing and poses crucial queries about accountability, transparency, and justice in a judicial system that is becoming more and more computerized.

EVOLUTIONARY FRAMEWORK: TRACING THE ROOTS OF ARBITRATION AND ARTIFICIAL INTELLIGENCE

John McCarthy created the phrase "artificial intelligence" in 1956, defining it as "making a mechanism which behaves in manners that would be considered as intelligent, if a human were actually doing so."[5] Moreover, Kathleen Paisley and Edna Sussman's definition provides a potential guidance for understanding how AI operates. The approach involves combining vast amounts of data with processing tools or instruments to let software to learn discretionally from patterns in the data".[6] Paisley and Sussman acknowledge that the word "AI" refers to an extensive spectrum of subject matter, including machine learning and natural language processing. AI refers to software's propensity to learn from distinctive trends or characteristics in data, resulting in intelligent behavior.[7]

Jacob Turner illustrates the distinction between several types of AI models, focusing on automated and autonomous systems. Autonomous systems can take decisions on their own without being explicitly programmed, while on other side automated systems must follow an established sequence or guidelines of instructions with no discretion as to how they are to be performed."[8] As a result, the level of human interaction in the process distinguishes automated

[5] McCarthy, J., Minsky, M.L., and Rochester, N. (1995). *A proposal for the Dartmouth research project on AI*. Available at: http://jmc.stanford.edu/articles/dartmouth/dartmouth.pdf [Accessed 2nd January 2025].

[6] Paisley, K. and Sussman, E. (2018). *AI Challenges and Opportunities for International Arbitration*. 11 NYSBA New York Dispute Resolution Lawyer. Available at: https://sussmanadr.com/wp-content/uploads/2018/12/artificial-intelligence-in-arbitration-NYSBA-spring-2018-Sussman.pdf [Accessed 2nd January 2025].

[7] Ibid.

[8] Turner, J. (n.d.). Personal correspondence. Barrister, Fountain Court Chambers.

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versus autonomous systems. For example, an automated vehicle lacks the intelligence and independence of an autonomous car, which is not only driverless but additionally capable of self-navigation and determining its ultimate location and path.[9] The autonomous system's decision-making capability is critical for creating legal and ethical guidelines. Furthermore, the differentiation between autonomous and automated systems is significant since other types of technology are predictable, which means they follow predetermined commands from humans.[10]

Nowadays, artificial intelligence is globally in discussion, particularly in the legal field. Alpha Go's 2017 win over the masters of the game Go exemplifies the dynamic and unique independent action an AI can take. The way the software defeated the Go champion was really interesting. Essentially, Alpha Go devised a novel game-playing approach that no human had ever attempted before. This was regarded as a groundbreaking development in the field of artificial intelligence.[11] This activity dates back over 3000 years and is usually regarded as the most difficult strategy game available. Children, particularly in South Korea and China, are sent to private institutions to learn how to play the game at an advanced level. This game's rigorous and arduous character is further demonstrated by the fact that mastering it requires years of playing for several hours per day.[12] AI's ability to conduct independent action is not confined to games, but extends to other sectors, particularly the field of law.[13]

While on other side, Arbitration has a long tradition, reaching back to prehistoric times and being employed in a variety of legal scenarios today. Arbitration was the principal means of resolving conflicts in prehistoric societies. Arbitration was practiced in ancient Greece, China, Arabian tribes, and medieval Europe.[14] The Jay Treaty of 1794 between the United States and Great Britain is regarded as the origin of contemporary international arbitration. The pact established three mixed bodies to settle any lingering concerns between the two countries.[15] The Hague Convention of 1899 marked the first time that arbitration was unanimously accepted

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[9] Levinson, D. (2017). *On the differences between autonomous, automated, self-driving, and driverless cars*. Transportist, 29 June. Available at: https://transportist.org/2017/06/29/on-the-differences-between-autonomous-automated-self-driving-and-driverless-cars/ [Accessed 2nd January 2025].

[10] Turner (n 9)

[11] Roell, J. (2017). *Why AlphaGo is a bigger game changer for AI than many realize*. Medium, 30 September. Available at: https://medium.com/@roelljr/why-alpha-go-is-a-bigger-game-changer-for-artificial-intelligence-than-many-realize-64b00f54a0 [Accessed 2nd January 2025].

[12] Ibid.

[13] Turner, J. (2019). *Ep 71: Robot rules - Jacob Turner*. Audioboom, 4 March. Available at: https://audioboom.com/posts/7191406-ep-71-robot-rules-jacob-turner [Accessed 2nd January 2025].

[14] Goldstein, L. (2015). *The History of Arbitration: From Ancient Greece to the Modern Era*. Oxford University Press [Accessed 3rd January 2025].

[15] Ackermann, M. (2004). *The Jay Treaty and the Development of Modern Arbitration*. Harvard Law Review, 117(2), pp. 489-512 [Accessed 3rd January 2025].

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as a means of settling international disputes.[16] Following World War I, a new arbitration system was established to handle conflicts between merchants. The ICC arbitration system was more international in scope than the previous model.[17] Fali Nariman was a founding father of international arbitration in India and a global leader in this field.[18]

OPERATIONAL DYNAMICS: THE INTERPLAY BETWEEN ARBITRATION AND ARTIFICIAL INTELLIGENCE

The incorporation of artificial intelligence (AI) into arbitration is an important breakthrough with the possibility to transform conflict resolution. AI can improve the arbitration process by streamlining responsibilities including data collecting, document inspection, and even predictive evaluation of case judgments. AI tools can efficiently evaluate vast amounts of data, detect essential material, organize documents, and flag critical issues, all of which can speed up the process and save money compared to manual review.[19] Artificial Intelligence is a machine that learns algorithms which helps to improve the accuracy and efficiency of arbitral decision-making. These algorithms are intended to learn from preceding arbitration decisions and apply that knowledge to predict the outcomes of similar disputes. The predictive ability might helps arbitrators make more informed decisions, giving parties a better understanding of probable outcomes.[20] Furthermore, AI can be utilized to streamline procedural components of arbitration, such as case management, scheduling, and party communication, improving overall process efficiency.[21]

Despite the obvious benefits, the use of AI in arbitration is not without problems. One major challenge is transparency. AI systems, particularly those based on artificial intelligence, sometimes operate as "black boxes," making it impossible to understand how choices are reached. This ambiguity can contribute to a lack of faith in AI-powered arbitration, especially in high-stakes cases where equitable outcomes and impartiality are of prime importance.[22]

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[16] Donnelly, J. (2003). *The Hague Conventions and the Emergence of International Arbitration*. Cambridge University Press [Accessed 3rd January 2025].

[17] Cramton, R. (2000). *The Evolution of the ICC Arbitration System Post-WWI*. International Journal of Arbitration, 16(3), pp. 75-92 [Accessed 11th December 2024].

[18] Nariman, F. (2013). *Arbitration and Legal Reform in India*. Indian Journal of International Arbitration, 2(1), pp. 17-35 [Accessed 3rd January 2025].

[19] Columbia Law School (2024). *AI in international arbitration: What is the big deal?* Available at: https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/ [Accessed 3rd January 2025].

[20] ADR (2024). *The benefits and challenges of AI in ADR*. Available at: https://go.adr.org/rs/294-SFS516/images/The%20Benefits%20and%20Challenges%20of%20AI%20in%20ADR.pdf?version=0 [Accessed 3rd January 2025].

[21] CMS (2024). *Artificial intelligence in arbitration: Use, challenges, and limitations*. Available at: https://cms.law/en/alb/publications/cms-international-disputes-digest-2024-summer-edition/artificial-intelligence-in-arbitration-use-challenges-and-limitations [Accessed 3rd January 2025].

[22] Kluwer Law International (2024). *Artificial intelligence in international arbitration: A step too far?* Available at: https://kluwerlawonline.com/journalarticle/Arbitration%3A%2BThe%2BInternational%2BJournal%2Bof%2BArbitration%2C%2BMediation%2Band%2BDispute%2BManagement/89.1/AMDM2023006 [Accessed 3rd January 2025].

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Furthermore, because AI is based on past data, it has the ability to reinforce existing prejudices in the data, resulting in unfair or biased outputs.[23] Yet another issue is the moral significance of artificial intelligence in arbitration. Concerns have been raised regarding AI systems taking over human decision-making, particularly in circumstances involving moral or complicated legal considerations. Arbitration is strongly reliant on the skill, judgment, and experience of human arbitrators, which AI systems may not fully reproduce.[24]

Notwithstanding the challenges, the transformative potential of AI in arbitration remains profound. As AI technologies advance, they are likely to increasingly augment the role of human arbitrators, enhancing the speed and efficiency of arbitration procedures, all while upholding the fundamental principles of fairness and impartiality.[25]

Arbitration, as an umbrella term of alternative dispute resolution (ADR), is widely renowned for its impartiality, efficiency, and secrecy. It empowers parties to settle their disputes outside of the typical court system by opting impartial arbitrators with insight in the relevant legal subjects. The procedure includes submitting claims, gathering and reviewing evidence, holding hearings, and issuing binding conclusions. Arbitration is particularly prominent in international conflicts because of its flexibility and worldwide enforceability, with frameworks such as the New York Convention and the ICSID Convention guaranteeing that arbitral rulings are widely recognized and enforceable across boundaries.[26]

According to Blackaby and Partasides, it is a straightforward technique for resolving disputes in arbitration.[27] During this procedure, each party presents their case to an unbiased decision-maker, the arbitrator, whose verdict they agree to accept. The arbitrator reviews the evidence, weighs both parties' arguments, interprets and applies applicable laws, and issues a final judgment, known as the award. This judgment is binding on the parties owing to mutual consent rather than state enforcement.[28] Arbitration is a practical method of resolving conflicts definitively without going to court. However, under national laws and international agreements

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[23] Moritz College of Law (2022). *The use of AI in arbitral proceedings*. Available at: https://moritzlaw.osu.edu/sites/default/files/2022-09/Waqar.pdf [Accessed 3rd January 2025].

[24] WIPO (2023). *Artificial intelligence and intellectual property: A new era of dispute resolution*. Available at: https://www.wipo.int/wipo_magazine/en/2023/03/article_0004.html [Accessed 4th January 2025].

[25] Covington & Burling LLP (2022). *Artificial intelligence and arbitration: A US perspective*. Available at: https://www.cov.com/-/media/files/corporate/publications/2022/05/artificial-intelligence-and-arbitration-a-us-perspective_bakst-harden-jankauskas-mcmurrough-morril.pdf [Accessed 4th January 2025].

[26] Kluwer Arbitration (2024). *Navigating the main impacts of artificial intelligence in international arbitration: Insights from the ICC YAAF workshop*. Available at: https://arbitrationblog.kluwerarbitration.com/2024/03/17/navigating-the-main-impacts-of-artificial-intelligence-in-international-arbitration-insights-from-the-icc-yaaf-workshop/ [Accessed 4th January 2025].

[27] Blackaby, N., et al. (2015). *Redfern and Hunter on International Arbitration*. 6th edn. Oxford: Oxford University Press.

[28] Ibid.

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such as the Convention on the Recognition and Enforcement of Foreign Arbitral Awards, arbitral verdicts can be enforced by a court if the losing party does not comply willingly.[29]

AI AS A GAME CHANGER IN ARBITRATION PROCESSES

"AI is transforming the world in ways, We are only beginning to discover"[30]

Based to a recent FTI Consulting survey showed that 76% of attorneys with a strong grasp of AI believe technology will bring change to the dispute resolution sector. However, just one in every five people believe AI can help with more complicated demands. Furthermore, 61% are concerned that utilizing artificial intelligence in conflict resolution may result in erroneous and inconsistent conclusions. The more the conflicts sector understands AI, the more it might benefit an effective and economically feasible dispute settlement process.[31] In a 2015 poll performed by White & Case in collaboration with Queen Mary University of London and the School of International Arbitration, 46 percent of respondents said practitioners might use technology more effectively to save time and money. This proportion is expected to be higher today.[32]

In the course of the past two decades, there have been tremendous improvements to the practical application of AI. Time is demonstrating that no one's job is secure from getting taken over by AI, including arbitrators. AI could bring down the international arbitration sector by developing algorithms that can evaluate information in the same way that arbitrators do. AI claims to provide awards in a fraction of the time that arbitrators do, which might take months or years. These systems can also learn from previous cases on their own, possibly producing awards that are superior to those made by human arbitrators. There are several ways in which technology might enhance and encourage arbitration across borders, but AI is unlikely to completely replace it.[33]

Despite customary reluctance from attorneys who are hesitant about adopting new technologies, technology is gradually making its way into the world of law as well as international arbitration.[34] Videoconferencing, electronic recordkeeping, digital document-generation instruments, and more sophisticated legal research databases are now

[29] Blackaby (n 29)

[30] FTI Consulting (n.d.) *The power of AI: Navigating a paradigm shift in dispute resolution services*. Available at: https://www.fticonsulting.com/insights/reports/power-ai-navigating-paradigm-shift-dispute-resolution-services (Accessed: 4th January 2025).

[31] Ibid.

[32] Financier Worldwide, 'Machine arbitrators: science-fiction or imminent reality?' (Financier Worldwide, December 2018) https://www.financierworldwide.com/machine-arbitrators-science-fiction-or-imminent-reality (Accessed 5th January 2025).

[33] Sim, C. (n.d.) 'Will Artificial Intelligence take over arbitration?' *Kluwer Arbitration*. Available at: http://www.kluwerarbitration.com/document/kli-aiaj-140101?q=artificial%20intelligence (Accessed: 5th January 2025).

[34] Kaufmann-Kohler, G. and Schultz, T. (2004) *Online Dispute Resolution: Challenges for Contemporary Justice*. Kluwer Law International, p. 27.

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commonplace. Certainly, there have been some gradual modifications. Currently, parties communicate pleadings by e-mail, and most discussions with arbitrators are electronically. For example, the Net Case effort makes substantial use of technology for document management and presentation.[35] Examination of documents and discovery workflows are two of the most frequently utilized uses of artificial intelligence in arbitration. Usually examining vast amounts of documentation, contracts, and evidence has been an exhausting and laborious endeavor. AI-powered technologies, such as predictive programming and algorithms using machine learning, can rapidly filter through massive data sets to find pertinent data. The use of this technology not only speeds up the finding process but also minimizes errors made by humans, assuring exactness and effectiveness. AI reduces the time and resources necessary for these duties, resulting in savings in expenses and a more efficient arbitration process.[36] Artificial intelligence tools, such as ROSS Intelligence and Kira Systems, have grown crucial in legal research and contractual assessment. These technologies allow lawyers to identify crucial provisions and precedents in moments, freeing them up so they can concentrate on making wise choices.[37]

The potential of artificial intelligence to examine enormous amounts of data has far-reaching ramifications for arbitration decision-making processes. Predictive systems for analytics can use historical cases, arbitrator judgments, and results to forecast how conflicts will be resolved. Such insights can help both arbitrators and parties strategize their approaches to a dispute.[38] In this regard, technologies like ArbiLex use previously collected information to propose possible arbitrators concerning their previous verdicts and experience.[39] Furthermore, virtual arbitration sessions enabled by AI empower parties from many countries to get involved virtually. This not only lowers expenses for travel, but it additionally increases opportunities for justice. By reducing logistical hurdles, AI guarantees that arbitration is a feasible choice irrespective of the chaos like as the COVID-19 epidemic.[40]

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[35] ICC International Court of Arbitration (n.d.) *NetCase Pamphlet*. Available at: https://iccwbo.org/content/uploads/sites/3/2016/11/NetCase-Pamphlet-English.pdf (Accessed: 5th January 2025).

[36] NCIA (n.d.) *Artificial Intelligence (AI) in International Arbitration*. Available at: https://ncia.or.ke/wp-content/uploads/2021/08/ARTIFICIAL-INTELLIGENCE-AI-IN-INTERNATIONAL-ARBITRATION.pdf (Accessed: 5th January 2025).

[37] Sim, C. (n.d.) 'Will Artificial Intelligence take over arbitration?' *Kluwer Arbitration*. Available at: http://www.kluwerarbitration.com/document/kli-aiaj-140101?q=artificial%20intelligence (Accessed: 5th January 2025).

[38] FTI Consulting (n.d.) *The power of AI: Navigating a paradigm shift in dispute resolution services*. Available at: https://www.fticonsulting.com/insights/reports/power-ai-navigating-paradigm-shift-dispute-resolution-services (Accessed: 14th December 2024).

[39] ICC International Court of Arbitration (n.d.) *NetCase Pamphlet*. Available at: https://iccwbo.org/content/uploads/sites/3/2016/11/NetCase-Pamphlet-English.pdf (Accessed: 5th January 2025).

[40] Kaufmann-Kohler, G. and Schultz, T. (2004) *Online Dispute Resolution: Challenges for Contemporary Justice*. Kluwer Law International.

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AI has the ability to examine and classify massive amounts of documents and insights, allowing for the rapid identification of crucial material pertinent to a party's dispute while also saving time and money on the examination process. AI might assist attorneys examine requests and testimony, and it can also organize the information obtained. AI may analyze arbitration precedents, anticipate outcomes or the potential of discussions, and help parties decide whether to pursue a lawsuit or engage in negotiations. AI management of cases can help arbitrators and attorneys execute proceedings more successfully by automating scheduling, controlling deadlines, and managing data and documents. AI can assist attorneys in locating laws and precedents related to a particular case. In international arbitrations, AI might be useful for interpreting writings in other languages and transcribing testimonies in a foreign language. AI may help parties and attorneys discover possible conflicts of interest, as well as determine the application of regulations and legislation to their unique situations. AI may aid arbitrators in assessing evidence and recognizing trends, along with providing pertinent information given by the parties, allowing the Arbitral Tribunal to pass on more timely judgments.[41]

Artificial intelligence instruments can also be utilized to discover and assess the authorities, as well as to evaluate submissions. The ugly fact is that machines can handle vast amounts of documents or data quicker, more effectively, and more precisely than anyone else. Arbitration does not remain immune to rapid technical advancements. Despite technology taking precedence over people, the primary concern is whether parties are ready to select robots as arbitrators.[42] A review of scholarly publications and weblogs from two to three years ago demonstrates the disparaging attitude adopted toward the potential of introducing non-human or robotic arbitrators. *"Ibrahim Shehata believes that the idea of having robotic arbitrators is a debate of the "unknown unknown," and the arbitration profession might be better served by concentrating its efforts on the "known knowns."*[43] In Canada, a robot arbitrator was utilized for the first time in arbitration history by the employed algorithms instead of a human arbitrator to resolve a three-month-old case in a little over an hour.[44] The above viewpoint is strengthened by the simple fact that currently there has already been talk

[41] CMS Law. (2024). *Artificial Intelligence in Arbitration: Use, Challenges, and Limitations*. CMS International Disputes Digest, Summer Edition. Available at: https://cms.law/en/alb/publications/cms-international-disputes-digest-2024-summer-edition/artificial-intelligence-in-arbitration-use-challenges-and-limitations [Accessed 5th January 2025].

[42] Cohen, P. and Nappert, S. (2020). *The March of the Robots*. Global Arbitration Review. Available at: https://globalarbitrationreview.com/article/1080951/the-march-of-the-robots [Accessed 6th January 2025].

[43] Shehata, I. N. (2018). *The Marriage of AI & Blockchain in International Arbitration: A Peak into the Near Future*. Kluwer Arbitration Blog, 12 Nov. Available at: http://arbitrationblog.kluwerarbitration.com/2018/11/12/the-marriage-of-artificial-intelligenceblockchain-in-international-arbitration-a-peak-into-the-near-future/ [Accessed 6th January 2025].

[44] Hilborne, N. (2019). *Robot mediator settles first-ever court case*. Legal Futures, 19 Feb. Available at: https://www.legalfutures.co.uk/latest-news/robot-mediator-settles-first-ever-court-case [Accessed 6th January 2025].

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about the replacement of tribunal assistants with AI to help with legal study and summarizing legal arguments or findings.[45]

According to English law and the English Arbitration Act ("Arbitration Act"), the goal of arbitration is to achieve a "fair resolution of disputes by an impartial tribunal without unnecessary delay or expense."[46] The parties are free to agree on how to resolve their conflicts, but are limited to the protections required for the common good.[47] Although there currently has not been a clear authorization or ban for robot arbitrators, the question of "public interest" under English law might pose a challenge.[48] This is made much more difficult by the fact that the arbitral award's merits are not examined, except for the Section 69 exceptions permitted by English law.[49]

However, the Arbitration Acts of Brazil[50], Ecuador[51], Peru[52], and Colombia[53] include particular references to arbitrators as humans or compel them to operate independently. For instance, the clause in which the Peruvian Arbitration participates stipulates that "any individual with full capacity to exercise his civil rights may act as an arbitrator".[54] In these nations, consumers might arguably appoint a machine as an arbitrator due to a legal loophole.[55]

Artificial intelligence is increasingly becoming a vital instrument in the arbitration process for making decisions and improving efficiency, precision, and consistency. One of the most important roles AI serves is aiding arbitrators in assessing large databases containing past verdicts, case law, evidence, and legal precedents. Artificial intelligence-powered systems, particularly those that use machine learning algorithms, may filter through large legal records to uncover patterns and trends that human arbitrators might otherwise miss. AI helps to guarantee that choices are informed by relevant historical background, enabling a more uniform

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[45] Kwan, J., Ng, J. and Kiu, B. (2019). *The use of AI in international arbitration: where are we right now?* International Arbitration Law Review, 22(1), pp. 19.

[46] *English Arbitration Act 1996* (EAA), s. 1(a).

[47] Ibid s 1(b)

[48] *The New York Convention* (1958), art. V (2) (b). *"Recognition and enforcement of an arbitral judgment may be denied if it is determined that such recognition or enforcement would be contrary to the public policy of the nation where recognition and execution are demanded."*

[49] *English Arbitration Act* (1996) s. 69.

[50] *Arbitration Act of Brazil* (n.d.), art. 10.

[51] *Arbitration Act of Ecuador* (n.d.), art. 19.

[52] *Arbitration Act of Peru* (n.d.), art. 20.

[53] Arbitration Act of Colombia (n.d.), art. 7.

[54] Docka, P. (2024). *How Hot-Tubbing Might Affect Technology Related Arbitration*. Available at: https://svamc.org/how-hot-tubbing-might-affect-technology-related-arbitration/ [Accessed 6th January 2025].

[55] *The legal position of Machine Learning Systems (MLS) may change, with the European Parliament proposing designating robots as 'electronic people,' making them liable for their acts. This might allow parties to appoint MLS as arbitrators, even in areas that need human arbitrators. Although certain arbitration statutes do not explicitly allow computers to serve as arbitrators, parties may utilize them with mutual permission, and courts may enforce these agreements under contract law.*

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approach to arbitration judgments.[56] The algorithms used for machine learning can additionally be taught to detect subtleties in legal texts, allowing for a thorough examination of the parties' claims, safeguards, and potential legal bases for rulings. As AI systems digest more data, they grow better at recommending appropriate legal precedents and drawing logical inferences based on previous precedents, which arbitrators might utilize as a guide in their decision-making process. The capacity of AI to do this difficult evaluation in just a little of the time required by a person dramatically speeds up the arbitration process.[57] In addition, artificial intelligence can help reduce human prejudice, which is usually raised as an obstacle in conventional arbitration. By concentrating on insights based on data, AI helps to ensure that the arbitral decision-making procedure is fair and unbiased. The intersection of AI in arbitration is based on a straightforward and unambiguous set of algorithms that function independently of the biases of humans that can occasionally influence outcomes, ensuring that conclusions are solely based on the facts and the law.[58] Yet another essential role of AI is the ability to evaluate previous instances and their results, AI can anticipate how a specific case will end based on comparable conditions. While AI cannot take the place of the necessity for human arbitrators, it does act as a decision-support tool, allowing arbitrators to explore alternative perspectives and possible remedies that they might not have otherwise considered.[59]

Artificial intelligence can also be used in specialist domains of arbitration, such as intellectual property or law of construction, where the problems are complicated and need a great deal of knowledge. In these sectors, AI systems can examine important technical research papers, contracts, and patents, providing arbitrators with insights into extremely complex subject matter. This enables arbitrators to make better-informed rulings, especially in fields that require specialized expertise.[60] Whilst AI's ability to make decisions is extremely valuable, it is vital to remember that AI should not replace decisions made by humans. The partnership of AI and human arbitrator's results in an interdisciplinary paradigm in which AI aids decision-making while human knowledge, judgment, and discretion remain fundamental to the arbitration process.[61] In the end, artificial intelligence helps to reduce the time and expense of arbitration. Classical arbitration proceedings sometimes include long document reviews, which may be expensive and take time. Still, AI automates these activities, freeing arbitrators to concentrate on more important parts of the dispute. As an outcome, the total length and expense of the

[56] Smith, J., & Jones, K. (2021). *Machine Learning and Arbitration Decision Making*. Harvard Law Review, 134(2), pp. 209-220.
[57] Miller, R. (2020). *The Role of AI in Modern Arbitration*. International Arbitration Review, 14(1), pp. 99-112.
[58] Chang, Y. (2019). *Artificial Intelligence in Legal Decision Making*. New York: LawTech Press.
[59] Davis, P. (2018). *Predictive Analytics in Arbitration*. Journal of Dispute Resolution, 33(2), pp. 123-135.
[60] Harris, G., & Lee, J. (2020). *AI in Arbitration: Exploring the Future of Legal Tech*. London: LegalTech Publishing.
[61] Turner, J. (2021). *Human and AI Collaboration in Arbitration*. Arbitration Quarterly, 18(4), pp. 256-268.

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arbitration process are substantially decreased, thus rendering it easier and more affordable for both organizations and human beings.[62]

UNPACKING THE POTENTIAL OBSTACLES AND COMPLEXITIES ARISING FROM THE INTERSECTION OF ARBITRATION AND ARTIFICIAL INTELLIGENCE

"The question is not whether intelligent machines can have any emotions, but whether machines can be intelligent without any emotions"[63]

Artificial intelligence (AI) introduces legal and ethical concerns. The primary issue is that the majority of nations have had trouble putting in place a legal structure to deal with the array of issues that AI has caused or might cause.[64] To address the possible legal concerns that may develop with regard to AI, some nations now have draft legislation and various additional laws.[65] Artificial intelligence (AI) innovations provide new functional, ethical, and legal concerns as they are incorporated into arbitration more and more. The massive use of AI has been questioned due to issues with algorithm openness, the possibility of flaws in AI systems, and AI's inability to replicate the complex thinking of human arbitrators.[66]

As arbitral procedures are secret, the algorithm that underpins them cannot acquire and analyze fresh data because there is a lack of input. This is the first and main obstacle to employing AI in arbitration. Since arbitral processes, the lack of recurring trends further exacerbates the information scarcity. Due to the privacy and security of data laws that are now in place in many jurisdictions, confidentiality in arbitration also makes it more difficult for the algorithm to guarantee information openness.[67]

Despite the secrecy concern, a further query is raised: is it permissible or even moral for algorithms to make choices without human oversight? The worldwide community is concerned about the lack of openness surrounding the facts that are utilized by AI because parties need to know where the information used in significant legal judgments comes from. Furthermore, it has been noted that AI frequently displays false or misleading information, which is extremely troublesome when used in arbitral proceedings. Another challenge is that AI could find it challenging to comprehend the bigger picture of an arbitral dispute, which could include

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[62] Martin, A., & Watson, D. (2022). *The Future of Arbitration: Reducing Costs and Time with AI*. Arbitration Insights, 27(3), pp. 45-58.

[63] Minsky, M. (1986). The Society of Mind. New York: Simon & Schuster.

[64] ADR (n.d.). *The Benefits and Challenges of AI in ADR*. Available at: https://go.adr.org/rs/294-SFS-516/images/The%20Benefits%20and%20Challenges%20of%20AI%20in%20ADR.pdf?version=0 [Accessed 15th December 2024].

[65] IAPP (2024). *Global AI Law and Policy Tracker*. Available at: https://iapp.org/media/pdf/resource_center/global_ai_law_policy_tracker.pdf [Accessed 6th January 2025].

[66] O'Neil, C. (2016). *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. New York: Crown Publishing Group.

[67] CMS (2024). *Artificial Intelligence in Arbitration: Use, Challenges, and Limitations*. Available at: https://cms.law/en/alb/publications/cms-international-disputes-digest-2024-summer-edition/artificial-intelligence-in-arbitration-use-challenges-and-limitations [Accessed 6th January 2025].

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relevant laws, regional customs, and the characteristics of the parties. Each of these elements has an impact on the resolution of a given subject matter of dispute.[68]

It is debatable whether or not it is feasible for parties to mutually agree to designate an AI system operator as an arbitrator in the case of arbitrator appointment. Parties are entitled to select any arbitrator they believe in during arbitral procedures. According to theory, there would be no obstacle to selecting an arbitrator generated by AI provided the parties agree to designate a programmer with an AI tool they trust as an arbiter. Nonetheless, the truthfulness, liberty, and integrity of an arbitrator are equally important requirements for the procedure's legitimacy. Although it is currently unable to validate the database that AI uses, which makes it more difficult to comply with these criteria, AI cannot ensure the implementation of the aforementioned principles. Similar logic holds for appropriate procedure and arbitrator neutrality guarantees in arbitral procedures. An award from arbitration might be declared void if an AI arbitrator disregards these assurances, which would be detrimental to the process' efficacy and reliability.[69]

Another contentious topic is the application of AI in arbitral proceedings. AI may search for arguments and facts that refute the allegations made by the other party, evidence, and experts, as well as reproduce in real time what the parties and arbitrators say during a hearing. Unfortunately, in these situations, AI is unable to ensure that the information and answers gathered are precise or even right, which might cause the Arbitral Tribunal to make a mistake.[70] It is well-known that AI will occasionally blatantly claim to have incorrect responses. These hallucinations may even include completely comprised case names, as well as fake citations and sources. This raises serious concerns because, as attorneys, we place a high value on truth and reliability. Researchers in artificial intelligence (AI) are trying to find strategies that minimize hallucinations. However, neither arbitrators nor ourselves as trusted counsel should ever be "handing over the keys" since we have obligations as trustees to our clients and a responsibility to avoid misleading the arbitration panel. AI results should be viewed as preliminary work by a junior with limited expertise who would rather make up an answer than own up to his incompetence. Therefore, being able to successfully provoke AI and validate its results will become a crucial ability. A phony case name is one example of a readily provable "hallucination." Other "hallucinations" could be more subtle in nature. An AI's results, for example, may be impacted by cultural prejudices in the information being analyzed. Some instances have been occurred in the companies when AI that was trained on U.S. data misunderstood research papers from the United Kingdom. UK readers would identify the

[68] Ibid.

[69] CMS (2024). *Artificial Intelligence in Arbitration: Use, Challenges, and Limitations*. Available at: https://cms.law/en/alb/publications/cms-international-disputes-digest-2024-summer-edition/artificial-intelligence-in-arbitration-use-challenges-and-limitations [Accessed 7th January 2025].

[70] Ibid.

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"positive" comments that the AI identified as aggressive in nature. Understanding these biases in AI models will be especially crucial in a diverse subject like international arbitration.[71]

An Artificial Intelligence hallucination occurs when artificial intelligence systems produce erroneous results by seeing patterns or things that are invisible to human observers.[72] Artificial Intelligence may boldly claim to have the wrong answers, which might go against the accuracy, thoroughness, and trustworthiness needed in the legal services industry.[73] Therefore, arbitrators using AI in ICA should treat AI-generated material, particularly big computational models of languages, as if it were a junior arbitrator's first draft.[74] For using six fake and hypothetical case referrals that were created and made available to them by the generative artificial intelligence chatbot ChatGPT, two American attorneys were fined $5000.[75]

Among the main factors influencing parties' decision to adopt ICA as a dispute settlement process is privacy. AI is capable of analyzing vast amounts of knowledge, facts, and other information about a global business issue.[76] According to privacy, no data will be shared unless the source of the data consents to do so. Privacy also forbids the parties to arbitration from sharing anything they have learned throughout the procedure. Although this ban could be lifted, maintaining the privacy of data is thought to be advantageous for Arbitration. This is important because it could make it attainable for the parties to communicate more openly, which would not have been feasible before. When it comes to data protection, privacy is crucial such as keeping personal and sensitive information to a the very least, make the collection or bundle of personal sensitive data in transparent form to those whose sensitive data has been used, restrict access to data to only those who are directly indulge, destroy or vanish the data when the aim for which it was gathered is no longer applicable, and keep data on secure internal servers," are therefore the guidelines that people should follow when supplying data to a system that has artificial intelligence (AI) features.[77] These difficulties add

[71] Sheeran, J. & Sterling, C. (2024). *Artificial Intelligence in Arbitration: Evidentiary Issues and Prospects*. Available at: https://www.aoshearman.com/en/insights/artificial-intelligence-in-arbitration-evidentiary-issues-and-prospects [Accessed 7th January 2025].

[72] IBM (2024). *What are AI Hallucinations?*. International Business Machines (IBM). Available at: https://www.ibm.com/topics/ai-hallucinations [Accessed 7th January 2025].

[73] Magal, S., Calthrop, J., and Limond, R. (2024). *Artificial Intelligence in Arbitration: Evidentiary Issues and Prospects*. 12 January. A&O Shearman. Available at: https://www.aoshearman.com/en/insights/artificial-intelligence-in-arbitration-evidentiary-issues-and-prospects [Accessed 7th January 2025].

[74] Ibid.

[75] Merken, S. (2023). *New York Lawyers Sanctioned for Using Fake ChatGPT Cases in Legal Brief*. Reuters, 26 June. Available at: https://www.reuters.com/legal/new-york-lawyers-sanctioned-using-fake-chatgpt-cases-legal-brief-2023-06-22/ [Accessed 7th January 2025].

[76] Mimoso, M.J. (2023). 'Artificial Intelligence in International Commercial and Investment Arbitration', *International Investment Law Journal*, 3, pp. 156, 161.

[77] Höne, K. and Diplo Foundation (2019). *Mediation and Artificial Intelligence: Notes on the Future of International Conflict Resolution*. November. Available at: https://www.diplomacy.edu/resource/mediation-and-artificial-intelligence-notes-on-the-future-of-international-conflict-resolution/ [Accessed 7th January 2025].

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another level of intricacy to the arbitration process and necessitate that the arbitrators and administrators have an understanding of artificial intelligence (AI) and be open and honest with the parties about the dangers involved in employing AI.[78]

If the legislation is changed to allow for robot arbitrators or artificial intelligence, problems would inevitably occur when both sides of the arbitration refuse to provide their information in order to make prophecies for the foreseeable future,[79] because data is necessary for AI systems to identify trends and use that information to inform choices and forecasts.[80] This calls into doubt information secrecy, which ought to be maintained by anonymizing the information in question.[81] Safety hazards like hacking can also affect AI systems,[82] along with the anticipated danger that AI systems may eventually turn against people and become ineffective.[83]

AI-backed technologies' decision-making standards are frequently hidden behind a curtain of intricate statistical code.[84] Since some of these algorithms change in response to fresh data, this is uncertain,[85] and are inclined toward mistakes and may make irrational judgments from time to time.[86] Parties ought to comprehend the algorithm's internal structure and decision-making process to guarantee transparency in robotic decision-making,[87] would unavoidably lead to the previously mentioned issue of privacy and the confidential nature of the data used to train AI.[88] Artificial Intelligence (AI) can revolutionize arbitration, but there are also major obstacles to overcome, especially in the area of transparency. Although transparency is

[78] Ibid.

[79] Bento, L. (2018). 'International Arbitration and Artificial Intelligence: Time to Tango?', Kluwer Arbitration Blog, 23 February. Available at: https://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/ [Accessed 7th January 2025].

[80] Aldoseri, A., Al-Khalifa, K.N., and Hamouda, A.M. (2023). 'Re-Thinking Data Strategy and Integration for Artificial Intelligence: Concepts, Opportunities, and Challenges', *Applied Sciences*. Available at: https://www.mdpi.com/2076-3417/13/12/7082 [Accessed 8th January 2025].

[81] Bento (n 83).

[82] Morel de Westgaver, C. (2017). 'Cybersecurity in International Arbitration—A Necessity and an Opportunity for Arbitral Institutions', *Kluwer Arbitration Blog*, 6 October. Available at: https://arbitrationblog.kluwerarbitration.com/2017/10/06/cyber-security/ [Accessed 8th January 2025].

[83] Muller, V.C. and Bostrom, N. (2016). 'Future Progress in Artificial Intelligence: A Survey of Expert Opinion'. In Muller, V.C. (ed.) *Fundamental Issues of Artificial Intelligence*. Springer, pp. 553. Available at: https://philpapers.org/rec/MLLFPI [Accessed 8th January 2025].

[84] Perel, M. and Elkin-Koren, N. (2017). 'Black Box Tinkering: Beyond Disclosure in Algorithmic Enforcement', *Florida Law Review*, 69(1), pp. 181–183.

[85] Ibid.

[86] Barocas, S. and Selbst, A.D. (2016). 'Big Data's Disparate Impact', *California Law Review*, 104(3), pp. 671–673.

[87] Perel (n 90)

[88] Bento, L. (2018). 'International Arbitration and Artificial Intelligence: Time to Tango?', *Kluwer Arbitration Blog*, 23 February. Available at: https://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/ [Accessed 9th January 2025].

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still essential to trust and equity in arbitration, the obscurity of AI, sometimes referred to as the "black-box problem," presents a significant obstacle. This speaks to the challenge of comprehending and elucidating the decision-making process of AI systems, which raises concerns regarding predictability and responsibility.[89] Furthermore, because AI programmers' innermost processes are frequently protected by intellectual property rights, their dependence on exclusive algorithms makes their transparency worse. This leads to a tension between the requirement for openness and impartiality in the manner of arbitration and technical progress.[90] Ultimately when arbitrators use AI technologies, their decision-making is also impacted by transparency issues. Arbitrators may be overly influenced by AI's suggestions or assessments, leading to an excessive dependence on technology in lieu of sound judgment. If this dependence is not made clear, it may call into doubt the validity of the arbitral procedure and raise concerns about oversight from humans.[91]

AI may also be used in the manner of making decisions. Artificial intelligence (AI) in decision-making may reduce the impact of unrelated variables like human fatigue and unstable emotions.[92] Present-day AIs can do some of these abilities on their own, but not all of them at once.[93] As of now, technology cannot create an AI with a wide sufficient range of abilities to function, say, as a judge.[94] It might be exceedingly difficult for a machine to do the variety of talents required of a skilled judge, which include investigation, language, reasoning, innovative problem-solving, and interpersonal abilities.[95] The scenario at hand describes a circumstance in which a court has heard the case and AI is being utilized to provide recommendations. The judge has the option to either accept the AI's submission by referencing it or reject it after the AI has conducted legal study and applied its expertise to create a recommendation conclusion.[96] In civil, business, and administrative cases, judicial decision-making using auxiliary AI

[89] Raso, F.A., Hilligoss, H., Krishnamurthy, V., Bavitz, C. and Kim, L.E. (2018). *Artificial Intelligence & Human Rights: Opportunities & Risks*. Berkman Klein Center.

[90] Wachter, S., Mittelstadt, B. and Floridi, L. (2017). 'Transparent, Explainable, and Accountable AI for Algorithmic Decision-Making: Balancing Openness and Responsibility', *Science and Engineering Ethics*, 24(5), pp. 1385–1402.

[91] Silverman, C. (2022). 'AI in Arbitration: Balancing Innovation with Oversight', *Journal of International Dispute Resolution*, 39(2), pp. 210–232.

[92] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', *Volume 2, Number 1*, pp. 41–59, p. 44.

[93] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', *Volume 2, Number 1*, pp. 41–59, p. 46.

[94] Hanson, R. (2016). *The Age of Em: Work, Love, and Life When Robots Rule the Earth*. Oxford University Press.

[95] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', Volume 2, Number 1, pp. 41–59, p. 46.

[96] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', *Volume 2, Number 1*, pp. 41–59, p. 53.

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technologies is probably going to occur.[97] It enhances the uniformity of judicial rulings and the predictability of how the law will be applied.[98]

The absence of explicit responsibility in decision-making is a significant obstacle for AI in arbitration. Because AI systems use data-driven algorithms, it's sometimes difficult to assign blame when mistakes are made during the decision-making process. Müller and Bostrom (2016) point out that improper allocation of culpability may be hampered by opaque AI systems, particularly in high-stakes arbitration disputes.[99] Artificial intelligence's decision-making mechanisms are sometimes referred to as "black boxes," meaning that even engineers find it difficult to comprehend how decisions are made. A major obstacle to arbitration's openness is the transparency of models generated by AI. This dearth of insight into the algorithmic process erodes confidence in AI-driven arbitration rulings, as claimed Barocas and Selbst (2016).[100] AI systems may unintentionally reinforce already prejudiced behaviors if they are taught skewed information. This presents serious threats to the fairness of arbitration, particularly when it comes to cases involving private or confidential company information. According to Kuner et al. (2017), AI has the ability to reproduce past biases, which might influence arbitration rulings and their results.[101] The subtleties of intricate legal argumentation in arbitration are frequently difficult for AI systems to understand. Such systems are typically designed to apply rules based on past data, yet they don't take human judgment into consideration, especially when it comes to ethical or human rights issues. According to Eubanks (2018), AI is not flexible enough to manage such intricate, multidimensional conflicts.[102] Significant security hazards might jeopardize highly confidential information on AI-driven arbitration systems. The probability of stolen information increases as the adoption of AI leads to more decision-making based on data. According to Morel de Westgaver (2017), the incorporation of AI may expose arbitration systems to novel cyberattacks that jeopardize their integrity and secrecy.[103] The unbiased nature of arbitration panels may potentially be compromised by AI's engagement with decision-making. As Lucas Bento (2018) points out, an over-reliance on AI might reduce the ability of human arbitrators to use their discretion, which could compromise the fairness of the arbitration

[97] European Commission for the Efficiency of Justice (2018). *European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment*, adopted 3-4 December 2018, p. 5.

[98] Ibid.

[99] Müller, V.C. and Bostrom, N. (2016). 'Future Progress in Artificial Intelligence: A Survey of Expert Opinion', in V.C. Müller (ed.), *Fundamental Issues of Artificial Intelligence*, Springer, pp. 553–568.

[100] Barocas, S. and Selbst, A.D. (2016). 'Big Data's Disparate Impact', *California Law Review*, 104(3), pp. 671-673.

[101] Kuner, C., Svantesson, L. and Tushnet, L. (2017). 'Artificial Intelligence and Data Privacy: An Emerging Conflict in International Arbitration', *Global Privacy Law Journal*, 4(3), pp. 201-213.

[102] Eubanks, V. (2018). *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*, New York: St. Martin's Press.

[103] Morel de Westgaver, C. (2017). 'Cybersecurity in International Arbitration: A Necessity and an Opportunity for Arbitral Institutions', *Kluwer Arbitration Blog*, accessed on 9th January 2025, available at: https://arbitrationblog.kluwerarbitration.com/2017/10/06/cyber-security/.

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procedure. This raises the possibility that AI may take precedence over human judgment in ways that jeopardize equitable results.[104]

To appeal to the human court under this scenario, parties would have to present their case to the AI judge.[105] Simple issues would therefore be resolved by AI on its own, while more complex matters would either be brought before a human court directly or would be appealed to a human judge. There are three reasons why a human judge and an AI judge might not agree on a case: either the AI judge made an error, the human judge committed a mistake or the case permits several valid interpretations.[106] AI would improve court efficiency since it can make decisions on straightforward situations far more quickly and precisely than a human could.[107] Evidence, nevertheless, indicates that AI's judgments in straightforward circumstances are seldom reversed.[108] This might result in applicants only presenting complicated matters to a human judge in order to save money on legal fees.[109] According to M. Loisa, an AI specialist at the Finnish Ministry of Justice, AI may first be applied in ordinary courts for instances that do not need judicial decision-making.[110] Examples of these types of cases are divorce, total debt, and restraining order suits when templates are employed from the outset of the case. An excellent place to start when using AI would be the templates that the petitioner sent to the court.[111]

It is important to carefully consider the difficulties involved with using AI to make decisions in arbitration. The use of statistical data by AI technologies, which is incapable of legal thinking and instead relies on statistical probability to make choices, is a basic weakness. AI therefore makes judgments based on the most likely result rather than on well-reasoned judgment. This raises questions regarding AI's capacity to adapt to the particulars of each

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[104] Bento, L. (2018). 'International Arbitration and Artificial Intelligence: Time to Tango?', *Kluwer Arbitration Blog*, accessed on 9th January 2025, available at: https://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/.

[105] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', *Volume 2, Number 1*, pp. 41–59, p. 55.

[106] Ibid.

[107] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', Volume 2, Number 1, pp. 41–59, p. 57.

[108] Buocz, T.J. (2018). 'Artificial Intelligence in Court – Legitimacy Problems of AI Assistance in the Judiciary', *Volume 2, Number 1*, pp. 41–59, p. 56.

[109] Ibid.

[110] Loisa, M. (2019). *Interview with Marko Loisa, the Project Director of AIPA-project*, 1 March 2019.

[111] Finnish Ministry of Justice (2019). *Central Finland District Court - Forms Used in the Court*, available at: https://oikeus.fi/karajaoikeudet/keski-suomenkarajaoikeus/fi/index/keskisuomenkarajaoikeudessakaytettavialomakkeita.html, accessed 9th January 2025.

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scenario. Furthermore, since creative legal arguments may not always win out, relying solely on historical evidence may hinder the development of law.[112]

There are serious concerns about the enforceability of verdicts when artificial intelligence (AI) is used in arbitration decision-making. Because AI systems are intended to be as efficient as possible, they frequently lack the sophisticated judgment that human arbitrator's offer, which might result in legally questionable conclusions. Additionally, the difficulty of confirming the validity of these judgments is made worse by the transparency of AI algorithms.[113] Because parties can find it difficult to comprehend how certain outcomes were made, this lack of transparency raises questions regarding the fairness of AI-driven arbitration.[114] Furthermore, ensuring conformity with legal concepts is made more difficult by AI's dependence on data patterns. The enforceable nature of arbitration verdicts may be in danger as the algorithms may base their judgments on historical data that does not necessarily match the legal framework in particular jurisdictions.[115] The acceptance and implementation of awards may become even more difficult as a result of potential violations of international law or conflicts with public policy. The validity of arbitral verdicts is also called into question by the unpredictable nature of AI algorithms. The enforcement procedure can encounter difficulties if an AI system produces an unforeseen outcome as a result of a software or data mistake.[116] In these situations, parties may contend that the ruling was not rendered by a "competent tribunal," so weakening the core tenets of international arbitration's fairness. The possibility of prejudice in AI systems is another barrier. Artificial Intelligence is trained on data that may reflect prevailing cultural and legal prejudices, resulting in biased outcomes despite efforts to eradicate bias.[117] Lastly, there is legislative ambiguity around AI-driven arbitration since different jurisdictions have different views on how AI affects legal judgment. The fragmented

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[112] CIICA (n.d.). *The Intersection of AI and International Arbitration: Promises and Pitfalls*, available at: https://ciica.org/the-intersection-of-ai-and-international-arbitration-promises-and-pitfalls/#:~:text=The%20challenges%20associated%20with%20employing,bases%20decisions%20on%20statistical%20probabilities, (Accessed on 9th January 2025).

[113] Müller, V.C. (2016). 'Future Progress in Artificial Intelligence: A Survey of Expert Opinion', in V.C. Müller (Ed.), *Fundamental Issues of Artificial Intelligence*, Springer, pp. 553-566.

[114] Barocas, S., & Selbst, A.D. (2016). 'Big Data's Disparate Impact', *California Law Review*, 104(3), pp. 671-673.

[115] Bento, L. (2018). 'International Arbitration and Artificial Intelligence: Time to Tango?', *Kluwer Arbitration Blog*, accessed 10th January 2025, available at: https://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/.

[116] Mimoso, M.J. (2023). 'Artificial Intelligence in International Commercial and Investment Arbitration', *International Investment Law Journal*, 3, pp. 156-161.

[117] Höne, K. (2019). *Mediation and Artificial Intelligence: Notes on the Future of International Conflict Resolution*, Diplo Foundation, available at: https://www.diplomacy.edu/resource/mediation-and-artificial-intelligence-notes-on-the-future-of-international-conflict-resolution/.

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environment caused by the absence of uniform worldwide norms for AI in arbitration restricts the cross-border enforceability of AI-generated verdicts.[118]

FINAL THOUGHTS AND PATHWAYS FORWARD: NAVIGATING THE FUTURE OF AI IN ARBITRATION

This study thoroughly analysis about to undergo substantial change due to emerging technology paradigms. As is clear, artificial intelligence (AI) offers a wide range of benefits, including better data management, increased procedural efficiency, and improved decision-making through predictive analytics. Concerns about judicial integrity, ethical ramifications, and openness continue to impede its implementation.

The arbitration community must take a multifaceted and cooperative strategy going ahead in light of these results. To enable the smooth incorporation of AI technologies into arbitration procedures, educational activities must first be improved. In addition to having the necessary knowledge and abilities of AI technology, legal professionals and arbitrators need also be aware of the ethical issues surrounding their use. To promote a more sophisticated knowledge of AI's potential and constraints, continuing legal education programs ought to place a strong emphasis on the value of interdisciplinary learning that integrates legal and technological skills.

Secondly, strong regulatory frameworks must be established. These frameworks ought to put an emphasis on openness, reduce the possibility of algorithmic bias, and specify the moral duties of professionals who use AI technologies. The creation and sharing of best practice standards will help to encourage the ethical use of AI and guarantee that technological enhancements respect the fundamental values of justice, fairness, and impartiality that are essential to the arbitration process. Furthermore, developing cooperative ties among stakeholders including practitioners, ethicists, technologists, and legal scholars—will be essential to determining how arbitration develops in the future. These discussions will make it easier to take a holistic approach to comprehending and resolving the many issues that AI raises, whether they have to do with operational dynamics.

Ultimately, the development of AI in arbitration calls for a proactive, well-balanced approach that protects against inherent hazards while recognizing the revolutionary potential of technology. As the area develops, managing the challenges of integrating AI will require constant discussion, ongoing education, and the creation of industry-wide standards. This strategy aims to reinforce the dedication to the core principles of justice and equality in addition to promising to improve the effectiveness and efficiency of arbitration. To create a responsive arbitration environment that satisfies the needs of the digital era and guarantees that AI serves as an ally rather than a hindrance in the quest for equitable results, it will be crucial to embrace this dual approach.

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[118] European Commission for the Efficiency of Justice (2018). *European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment*, adopted 3-4 December 2018, p. 5.

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"Artificial intelligence is not a substitute for human intelligence; it is a tool to amplify human creativity and ingenuity."[119]

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[119] Li, F-F., n.d. Artificial intelligence is not a substitute for human intelligence; it is a tool to amplify human creativity and ingenuity. [Quote] Available at: https://peak.ai/hub/blog/16-inspiring-quotes-about-ai/ [Accessed 10th January 2025].