ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

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ABSTRACT

In this paper, the author explores the possibilities of AI technologies in the field of international commercial arbitration and whether AI is capable of replacing a human arbitrator or merely serve as a tool in the process. The data-intensive nature of international commercial arbitration is the perfect place for AI since it's capable of efficient and accurate analysis of vast amounts of data at a pace unmatched by humans. Revieing documents, analysing cases and even predictive analysis are where the capabilities of AI shine the brightest. However, this paper contends that the role of an arbitrator involves not just a mere analysis of data but also the aspects of morality, empathy and cultural context, especially in the field of international commercial arbitration, which AI is not yet capable of. Moreover, the author analyses legislations such as the New York Convention (1958) and the Indian Arbitration and Conciliation Act (1996), to examine whether an AI-driven award is even legally enforceable under these laws. The paper also explains the 'black box' issue, which raises serious concern over the lack of transparency in an AI-driven arbitral award. The paper further explores the use of AI in arbitration through new technologies such as explainable AI (XAI), sentiment analysis, and predictive legal technologies through existing applications such as Arbilex, Ross Intelligence, etc. While these applications are seriously impressive in their functioning and predictive analysis, they still lack the capability of accurately replicating human intuition and emotional intelligence, one that only a human arbitrator could portray. Instead, this paper argues for a hybrid model of arbitration. One where the benefits of both an AI and a human arbitrator could be utilised. This would result in faster data processing while maintaining the aspects of morality and human intuition when giving an arbitral award.

Keywords: Artificial Intelligence, International Commercial Arbitration, Legal Reasoning, AI in Law

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

INTRODUCTION

1.1 Background

In a brief period, artificial intelligence (AI) has revolutionised all forms of traditional professions, including the field of law[1]. The process of arbitration, especially international commercial arbitration, which has been the definitive method of dispute resolution for international organisations and companies due to its efficiency, flexibility, and reliability, has seen a massive shift due to the integration of AI, which prompts the question: can AI eventually replace human arbitrators themselves?

AI has already proven its ground-breaking ability[2] in its ability to process large volumes of data and make precise analytical deductions from it. In theory, its application should result in a faster and more efficient process of arbitration[3].This, however, is easier said than done. Which objective capabilities of AI have already far surpassed the human brain? It is yet to integrate something that is equally important in the due process of law—morality, empathy, and other intangibles that make the job of an arbitrator (or judge) more than just an evaluation of data and documents.

This paper explores the possibility of AI to someday be able to develop these nuanced and complex human emotions or will it always be limited to a digital assistant that can at most be the right hand of an arbitrator, but not the arbitrator himself. By analysing current literature, this study will attempt to find out if AI has the capability to develop human like intelligence which is a mix of both data and emotion, and if it does, will it ever be accepted on that same scale as a human? What new-age problems will arise with the evolution of AI in arbitration?

1.2 Rationale for the Study

The rapid growth of AI has changed all aspects of life, and the field of international commercial arbitration is no exception. AI technologies in the legal field, such as Ross Intelligence, Lex Machina, and Kira Systems, are changing the traditional legal process of data analysis by processing vast amounts of legal data, like Acts. and case laws, at superhuman speeds and accuracy, the likes of which are not humanly possible.[4]

AI-powered management software has further enhanced the process of legal research by reducing the burden on professionals and taking up clerical tasks of keeping records and managing data. This enables legal professionals to focus more on actual work that requires human intervention and leave menial tasks to AI.

These developments provide both benefits and challenges in the field of international commercial arbitration. While AI can replace certain stages of a legal process, primarily in data analysis and document drafting, the concerns regarding the inhuman "robot-like" approach do leave a lot of concern when talking about AI integration in the crucial process of decision-making.[5]. This study seeks to study both sides of the coin and present a final conclusion of what the future of AI looks like in the field of international commercial arbitration.

1.3 Research objective

The objective of this study is to examine current trends and developments in the use of artificial intelligence (AI) within the field of international commercial arbitration. It aims to analyse how AI technologies can be integrated into arbitral proceedings to enhance efficiency and consistency, identify the challenges associated with such integration, and propose recommendations to effectively address them.

1.4 Research Questions

This paper seeks to address the following key questions:

1. To what extent can artificial intelligence be inte-

1 Harnessing Technology: Embracing AI's Potential in Arbitration, CHARLES RUSSELL SPEECHLYS (Apr. 6, 2025), https://www.charlesrussellspeechlys.com/en/insights/expert-insights/dispute-resolution/2024/harnessing-technology-embracing-ais-potential-in-arbitration/.

2 Nick Whitehouse et al., *Better Bill GPT: Comparing Large Language Models Against Legal Invoice Reviewers* (Apr. 2, 2025) (working paper), https://arxiv.org/abs/2504.02881.

3 Chartered Inst. of Arbitrators, Guidelines on the Use of AI in Arbitration (2023), https://www.ciarb.org/resources/features/ciarb-guidance-on-use-of-ai-in-international-arbitration/.

4 Terry Rauch, AI in IA: To What Extent and Capacity Can Artificial Intelligence Assist in International Arbitration Procedures and Proceedings? (Apr. 1, 2024) (working paper), https://papers.ssrn.com/abstract=5100706.

5 Carlos Montemayor, Jodi Halpern & Abrol Fairweather, In Principle Obstacles for Empathic AI: Why We Can't Replace Human Empathy in Healthcare, 37 AI & SOC'Y 1353 (2022).

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

grated into the process of international commercial arbitration? Will it ever develop human-like emotional intelligence? What are the current capabilities and limitations of AI in the process of international commercial arbitration?

2. Can AI ever develop morals, sympathy, and other nuanced human emotions?
3. Would AI-generated arbitral awards, if passed, be enforceable under the existing law, such as the New York Convention?

1.5 Methodology

This research adopts a doctrinal methodology focusing on the examination of secondary data in the field of AI and law. The study critically evaluates how AI tools are being integrated into the legal process and whether they can ever develop to the point of human likeness.

A comparative analysis is also done in the study of the different AI technologies that currently exist in the legal field and are used in the process of international commercial arbitration. These include research analysis tools such as Ross Intelligence, Kira Systems, etc., that offer predictive analytics, natural language processing, and other forms of legal assistance.

The study is based entirely on secondary data collected from a variety of credible sources such as academic journals, legal databases, national laws, international laws, arbitral awards (where publicly available), and other available legal sources.

2. The Current Use of AI in Arbitration

International arbitration gained major traction during the 1980s to 2020s. Significant arbitration institutions like LCIA, ICC, and SIAC saw a major increase in cases being administered. This change can be attributed to major economies around the world becoming globalized, including India, which gave rise to international trade and, consequently, cross-border commercial disputes.[6]

Naturally, with the advent of time and technology, it was all but necessary for international arbitration to grow as well and adopt newer technologies. During the COVID pandemic in 2020, we saw large-scale adoption of technology like video conferencing and e-document verification[7], which marked the beginning of the tech revolution that has today resulted in numerous tools being used by legal professionals in international arbitration.

Post pandemic, even though the route for the tradtional legal practice reopened, organisations realised just how powerful technology can be during the arbitral process and decided to move in the direction of tech and AI enabled arbitration. This was done due to 5 major reasons.

Firstly, document verification can be one of the most expensive processes of arbitration, depending on the type of dispute, which not only results in an increase in cost but also a waste of time. E-discovery document verification aims to combat these issues. By using large-scale AI models, a major portion of this process gets extremely simplified and reduces stress on legal professionals by minimizing human intervention. AI is able to analyse existing documents drafted by lawyers and uses that knowledge as a sample for the preparation of new documents with nuanced changes. It also, continuously, updates existing and pending documents based on lawyers inputs.

Secondly, AI, specifically AI-powered platforms, can analyse legal texts and swiftly deliver the relevant precedents, cases, and legislation. AI can identify and authenticate citations from legal cases, along with their interpretations. As more and more technological advancements in search engines and text generation tools occur, legal professionals will be able to automate other facets of legal research, like addressing intricate legal inquiries, composing legal briefs, and drafting memoranda.

Thirdly, the transcription of proceedings is now becoming more mechanised by utilising both voice recognition and speech conversion technologies. Translation of the different languages is conducted by machines, with human translators acting as general evaluators during the process. Specifically in international arbitration, where hearings often take place remotely and involve global professionals, automated transcribing proves to be quite advantageous. Such technologies are particularly beneficial in the preparation of witness testimony,

6 Rauch, supra note 4.

7 Tania Sourdin, Bin Li & Donna Marie McNamara, Court Innovations and Access to Justice in Times of Crisis, 9 HEALTH POL'Y & TECH. 447 (2020).

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

allowing lawyers to verify specific points that emerged during witness examination.

Fourthly, there are AI systems that offer valuable insights into the work of international arbitrators by evaluating their performance on previous cases they presided on. It is a widely accepted fact that only a limited number of arbitral awards get publicised. Prior to selecting an arbitrator, parties must overview arbitrators' previous publications and engage with their peers informally to find further information. Details on the duration of procedures, questions posed by the arbitrator during hearings, and the rationale in the final award will prove to be incredibly beneficial. AI produces reports from the collected information, resulting in the ability to make informed choices about arbitrator nominations and appointments.

Finally, using AI for predictive analytics by evaluating precedents and rulings, AI can help lawyers and professionals to predict the possible outcome of the case. This is particularly beneficial in arbitrator appointments, as AI tools can assess how the possible nominees are likely to conduct arbitration and give an award in relation to their prior work and precedents. The tool specifically predicts the conduct of the arbitrator and the opposing counsel, assisting parties in anticipating obstacles in their claims.[8]

However, due to the confidential nature of international commercial arbitration, there is a lack of availability of data, which can be detrimental to the performance of these AI tools. There is however, probability of increase in the use of these tools if arbirtral awards in International commercial arbitration get released without obstacles and red tape. Also, the use of these tools may extend to investment treaty arbitration where transparency is higher.[9]

2.1 AI tools in arbitration

To understand the role of AI in arbitration, we first need to understand the already existing effect of IT and how it has reshaped the legal practice. IT revolutionized the ways in which arbitration proceedings are conducted by bringing about different rules of evidence, document verification, and digital case hearings. Some of the tools that have achieved this effect are[10]

sArb: The software robot sArb—Simplified Arbitration Reference Facility—was created by UiPath for the Bucharest International Arbitration Court (BIAC) in collaboration with the commercial law and conflict resolution firm Consortium Legal. It is an end-to-end solution all the way from the process of submitting a conditional offer to the generation of an arbitration agreement. Moreover, it automatically intimates the parties on the BIAC and sArb process

Businesses around the world will benefit from sArb as it cuts down on unnecessary noise created during contract negotiation as parties don’t have to engage in face-to-face negotiations. BIAC, by being the intermediary, promoted trust and in the future will help build a strong foundation for arbitration between parties.[11]

Kira Systems: This application, developed by Noah Waisberg, was for assisting in due diligence. Due diligence is a traditionally fatiguing part of the legal practice, leaving attorneys frustrated with the amount of paperwork and documents that need to be analysed. Kira Systems solves this issue through accurate contract analysis, highlighting important sections and preparing a detailed analysis. The company claims that Kira is capable of reducing the workload by almost 40-90 percent.[12]

Ross Intelligence: Ross Intelligence was developed by Andrew Arruba and Jimoh Ovbiagele. This legal tool uses both machine learning and language models for quicker and more effective legal research. This saves lawyers valuable time, which would otherwise be used to go through numerous case laws to find the relevant precedent. The fundamental is both the efficiency and accessibility of the law; since it makes the attorneys job a lot easier, it in turn makes the process more accessible to the public. At first glance, it may seem as though the mere purpose of this tool is to enhance the volume of cases legal firms can take and thus make more money by loading even more cases onto the partners and the associates; yet, its true objective lies in a different direction: the 'democratisation of the law.' This is due to the lack of access to free and proper legal help for US citizens. This is primarily due to the high level of skill possessed by lawyers,

8 Anna Kolomietc, Artificial Intelligence and Arbitration: Current Trends (Nov. 21, 2023) (working paper), https://papers.ssrn.com/abstract=4685162.

9 *Ibid.*

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

necessitating compensation for the hours they invest. ROSS Intelligence dramatically reduces hours, consequently decreasing legal costs. [13]

Lex Machina: This is a legal analytics platform that has transformed the legal practice by providing attorneys with the necessary data and insights for effective decision-making and helping them make better litigation strategies. Lex Machina uses the capabilities of AI and machine learning to provide attorneys with an extensive database that enables them to optimise research and case evaluation, enhance litigation strategies, and deliver more effective client advisory services. [14]

Along with these, there are various other tools like aiWare, eBrevia, Fuzzy Logic, and ChatGPT, to name a few, that are currently being utilised with more under development that will slowly change the legal sphere and enable lawyers around the globe to upskill their practice and make it a more efficient and effective process.

2.2 Current Limitations

Any data-driven AI programs first and foremost require access to data. In the legal field, although there is an abundance of data, these platforms require sequential linear data to base predictions upon, while legal data and precedents can get more complex with subtle nuanced changes that AI may not be able to grasp. Moreover, a large amount of data, especially in international commercial arbitration, will be unavailable due to the confidentiality of arbitral awards.

Additionally, these tools can develop a bias due to the nature of data fed to them, which in turn would require a constant eye of the legal professional, making the process not as seamless as it may seem on paper. Every piece of data that AI currently produces cannot be blindly trusted and does require an additional proofread; thus, in addition to taking 2 steps forward, it also feels like you need to take a step back while dealing with them.

3. Human Arbitrators vs. AI: Capabilities & Gaps

AI's abilities and shortcomings are undeniable, as we have already discussed. However, real-world comparison of human abilities and AI will provide a more adequate comparison where we can compare how knowledge compares to human reasoning and the importance of empathy, discretion, and moral judgment. We will also look into recent AI integration in arbitration and the legal practice in general and analyse if there have been significant improvements in AI's interpretation of tone, context, and cultural nuance.

3.1 Legal Knowledge vs. Legal Reasoning

As discussed, AI tools have a far superior capability in the realm of legal research[15], be it retrieving, assessing, analysing, or compiling relevant case laws and precedents. This makes them exceptionally useful in legal research and due diligence and can even run predictive analysis[16]. Their infinite pool of *knowledge* gives them the ability to cross-reference data thousands of times faster than even the most intelligent legal professionals.

However, legal reasoning differs from legal knowledge in various aspects. While knowledge refers to data itself, reasoning refers to the interpretation of data[17]. This requires comparing arguments, applying deductive reasoning, and producing a judgment based upon not just law but morals, ethics, empathy, and other aspects of emotional intelligence.

The application of intent, context, and equity by human arbitrators is key to a justifiable dispute settlement that is grounded in both law and morality[18]. These capabilities cannot be replicated by AI, as they require what people generally call 'practical wisdom.' In the field of international commercial arbitration, it is even more important, as the entire basis of international law is not a set of strict rules but a commonly accepted and respected set of principles.

This is not to say that AI will never be capable

13 Lucian Schwartz-Croft, Effects of ROSS Intelligence and NDAs, Highlighting the Need for AI Regulation (Feb. 15, 2024) (working paper), https://papers.ssrn.com/abstract=4727662.

14 Lex Machina – The Legal Wire (July 5, 2023), thelegalwire.ai/lex-machina/.

15 AI Based Applications for the Legal Field, supra note 12.

16 Lex Machina, supra note 14.

17 Frederick Schauer, On the Relationship Between Law and Legal Reasoning (Dec. 21, 2020) (unpublished manuscript), https://papers.ssrn.com/abstract=3752911 (last accessed Apr. 23, 2025).

18 Lance Eliot, AI and Legal Argumentation: Aligning the Autonomous Levels of AI Legal Reasoning, arXiv (Sept. 11, 2020), http://arxiv.org/abs/2009.11180 (last accessed Apr. 23, 2025).

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

of legal reasoning, as the entire concept of machine learning is based on the evolution of these AI systems with time and experience. However, even with advancements, their acceptance will be a concern since humans have historically been reluctant to accept decisions of machines even when assured of their unbiased programming[19], resulting in various fields such as gambling still being practiced mostly in a rudimentary format even with the advent of technology. It is not just the evolution of AI but the evolution of people as well that will decide the fate of AI in legal decision-making.

3.2 The importance of empathy, discretion, and moral judgment

While AI has the ability to analyse and interpret vast amounts of legal data and thus possess near-infinite legal knowledge, it lacks the fundamental ability to implement empathy, discretion, and moral judgment into its conclusions.[20] These qualities are not merely a supplement to the legal procedure but are the core principles of natural law, which is the basis of the legal system we now know and practice. These are essential for fair dispute resolution, especially in international arbitration, where disputes often involve a closer look at the cultural and customary practices of the parties.

Empathy is the ability to step into the other party's shoes and try to understand their perspective on things. [21] This is crucial for an arbitrator to do during the decision-making process, as it gives a deeper understanding and helps to rationalise the actions of the party at a very primary human level. AI, however, is incapable of this action. [22] Empathy allows an arbitrator to take some degree of emotions involved in the dispute also into account, which could include aspects like trust, history, or personal relationships. It enables the arbitrator to consider not just the legal arguments but also the human aspects, which can lead to more nuanced and fair outcomes. While AI is efficient in processing data, it lacks the capacity to recognize and respond to such human emotions and complexities, limiting its potential to replace human arbitrators.[23]

Discretion is very pivotal in arbitration and more so in international commercial arbitration, as it follows a policy of mutual understanding of parties and interpretation of complex cross-border regulations, which are not enforceable in nature but are more along the lines of guidelines and recommendations that countries follow for mutual benefit and maintenance of international peace and order.[24] Thus, discretion allows the arbitrator to take into account customary practices, the context of the parties, and other nuances surrounding the dispute that are not set in stone but rather inferred from circumstance. This means that the arbitrator can work in a way that promotes fairness and equity and not just be bound to a rigid set of rules.[25] As we know that AI is capable of processing large amounts of data, it is not yet capable of exercising discretion. This impairs AI from weighing in context and thus makes it incapable of taking decisions based on the very human virtue of fairness.

Moral judgment requires one to look at an issue with a lens of ethics and societal values. It is especially important in international commercial arbitration, where rules are generally of an ambiguous nature and therefore require a more nuanced approach to fairness and equality based on the principles of natural justice. [26]During proceedings, arbitrators will face issues that will not just require their technical analysis but an analysis of moral principles such as good faith, abuse of power, etc. This makes human arbitrators more adept at understanding a legal dispute, as they have a separate dimension from which they can analyse issues that AI currently lacks.

19 Yochanan E. Bigman & Kurt Gray, People Are Averse to Machines Making Moral Decisions, 181 Cognition 21 (2018).

20 Cole Dorsey, Hypothetical AI Arbitrators: A Deficiency in Empathy and Intuitive Decision-Making, 13 Arb. L. Rev. (2021), https://elibrary.law.psu.edu/arbitrationlawreview/vol13/iss1/12.

21 Manuel Camassa, Empathy and Moral Judgement, in On the Power and Limits of Empathy (Manuel Camassa ed., Springer Nature Switzerland 2024), doi.org/10.1007/978-3-031-37522-4_6 (last accessed Apr. 27, 2025).

22 The Empathy Paradox: Can AI Truly Connect with Customers in a Contact Centre?, Wavestone, wavestone.com/en/insight/the-empathy-paradox-can-ai-connect-with-customers-in-contact-centres/ (last accessed Apr. 27, 2025).

23 Cole Dorsey, supra note 20.

24 UNCITRAL Secretariat Guide on the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, 1958) (Vereinte Nationen & Vereinte Nationen eds., United Nations 2016).

25 Yeshnah D. Rampall, The Sanctity of Party Autonomy and the Powers of Arbitrators to Determine the Applicable Law: The Quest for an Arbitral Equilibrium, 23 Harv. Negotiation L. Rev. 345 (Spring 2018).

26 Camassa, supra note 21.

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

Without moral reasoning, decisions might be factually correct but ethically wrong, which in turn defeats the very purpose of law. Therefore, moral judgment is a key element of the decision-making in international commercial arbitration that makes sure that every legal dispute, in its very nature, does not defeat the purpose of adjudication through overreliance on bare factual data.[27]

3.3 Limitations of AI in Interpreting Tone, Context, and Cultural Nuance

While over time AI has developed due to machine learning and has become capable of complex data analysis, it lacks the ability to interpret tone, context, and cultural nuance, which is an integral part of international commercial arbitration. The process of decision-making is not mere strict interpretation of rules and principles but is embedded with cultural context, emotional understanding of parties, and implied meanings of certain customary practices[28] that AI, even those trained to interpret such complex legal data, fail to grasp.

Tone is one of the most difficult aspects for AI to interpret. A phrase can be inferred differently depending on its tone; it can portray sarcasm, humour, hostility, respect, etc., but AI models, especially those capable of analysing mere text inputs, cannot analyse the tone in which it is said, creating erroneous errors in the process.[29] While there are AI tools that exist that can, to some extent, interpret an approximate emotional intent, they are far off from what humans are capable of in their ability to read between the lines, especially in legal matters of high stakes where formality often masks deeper sentiment.

Similarly, even context plays an important role in legal proceedings. While AI can interpret historical data to put context into place while analysing a legal dispute, especially in the field of international commercial arbitration, where the context of cross-border relations, disputes, and history between the disputing states is essential, it lacks true consciousness or a lived understanding of human dynamics and therefore struggles to weigh context as a human arbitrator would.[30]

Lastly, one of the biggest challenges is the interpretation of cultural nuance in a dispute involving international commercial arbitration. An AI model trained to interpret text in the Western context may struggle to interpret text in the context of other cultural societies, especially those that have major cultural differences from the West, such as the Asian, African, and Middle Eastern parts of the world.[31] Also, an AI model developed in a particular country might favour the interpretation of text of that country since it was trained and developed by individuals of that country, resulting in biases and genuine concerns regarding the fairness and legitimacy of the entire process.

Thus, while AI may be an aid to a human arbitrator, it is far from capable of interpreting tone, context, and cultural nuances, all of which are vital to international commercial arbitration.

4. Challenges and Possibilities

The question of whether AI can replace human arbitrators is a complex question that involves fields of law, ethics and technology. When considering international commercial arbitration, the complexities increase due to its inherent inclusion of cross-border social, cultural, political and economic factors. While AI has proved to be more than capable of analysing large amounts of data, its integration as sole arbitrator still possesses certain challenges[32]. We have already discussed its inability to interpret tone, context and cultural nuances, but there are certain challenges that extend beyond the mere theory of AI integration. Legal systems around the world, such as the New York Convention and the Indian Arbitration and Conciliation Act, are silent on the enforceability of an AI-driven award. As we explore the viability

27 Simon Weber & Julie Martinez, Good Faith in International Arbitration: Comparative Approaches in ICC Awards, ICC Int'l Ct. Arb. Bull., Issue 2, at 112 (2020), Available at: https://trans-lex.org/109210.

28 J. Frank Yates & Stephanie De Oliveira, Culture and Decision Making, 136 Organizational Behav. & Hum. Decision Processes 106 (2016).

29 Julia Hirschberg & Christopher D. Manning, Advances in Natural Language Processing, 349 Science 261 (2015).

30 Karen J. Alter & Yuval Shany, The International Arbitration Tribunal and Human Judgment: Limits of Machine Decision-Making, 34 Arb. Int'l 221 (2019).

31 Su Lin Blodgett et al., Language (Technology) Is Power: A Critical Survey of "Bias" in NLP, in Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (Dan Jurafsky et al. eds., Ass'n for Computational Linguistics 2020), aclanthology.org/2020.acl-main.485 (last accessed May 21, 2025).

32 Dorsey, supra note 20.

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

of AI as an arbitrator, this chapter will examine the core challenges posed by existing legal frameworks, ethical obligations of fairness and transparency, and the irreplaceable human qualities integral to adjudication. It will also consider whether an AI and human arbitrator hybrid model can work and, if so, what could be the possible increase in efficiency.

4.1 Legal Recognition and Enforceability

Can AI-rendered arbitral awards even be enforced? According to the New York Convention, 1958, all contracting states have to recognise and enforce arbitral awards passed under the convention[33]. However, the convention is silent on the enforceability of an arbitral award passed by a non-human arbitrator such as AI. According to Article V(1)(d), arbitral awards can be refused from enforcement if the arbitral procedure was not in accordance with the agreement of the parties or in violation of the law of the country where the arbitration took place[34]. Parties can use this article as a defence during AI-driven procedures when the decision is not in their favour, thus rendering the entire process useless.

In India, the law governing the enforceability of arbitral awards is the Arbitration and Conciliation Act, 1996. According to it, each arbitral award has to be passed by an arbitral tribunal instituted by it. [35] The act has no mention of treating AI as an all-encompassing arbitral tribunal capable of passing a valid arbitral award, potentially rendering AI-generated awards unenforceable under Indian law.

The Chartered Institute of Arbitrators (CIArb), in its recent guidelines on the use of AI in arbitration, has mentioned the risks associated with such a practice. [36] The guidelines have laid great emphasis on transparency as well as party consent when incorporating AI into the arbitration process. While there is no question about the advantages of AI as a tool for assisting the process, its legality and acceptance as a sole arbitrator are still topics of contention. Until the legal framework catches up to the technological advancements in this field, the enforceability of such AI-driven awards will remain uncertain.

4.2 Human Intuition vs. Machine Logic

The main issue with employing AI in legal processes is its inability to replicate human intuition, which is a culmination of various emotional and moral values that we as humans inherently possess. The importance of empathy and intuition and the limitation of AI to interpret either were displayed in The Chamber of Arbitration of Milan Award No. 7813[37] and the 'Enrica Lexie' Incident[38]. These cases display the challenges an AI arbitrator could face without the ability to empathise and make intuitive decisions. In the absence of them both, it might be reasonable to expect AI to be able to handle small-scale, straightforward, contract-driven disputes like the Chamber of Arbitration of Milan Award No. 7813. However, when the issue at hand, even if small in scale, comprises complex facts such as the ‘Enrica Lexie’ incident, AI fails to resolve the dispute in a just manner due to its inability to reason the dispute from all the different angles. Therefore, since AI is unable to make intuitive decisions, it cannot possibly pass a just award in cases involving niche and intricate disputes. [39]

To understand this issue further, it's also important to understand the black box problem. While the inputs and outputs of an AI program are observable, the inner workings and the process by which it arrives at its output are rather obscure. Meaning that even the very humans who designed it cannot reason the outputs it produces[40]. The very basis of transparency in arbitration has been laid down in various principles such as the New York

33 United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, June 10, 1958), newyorkconvention.org/english (last accessed May 24, 2025).

34 ibid.

35 Arbitration and Conciliation Act, 1996, §§ 44–52 (India).

36 Chartered Inst. of Arbitrators, Guideline on the Use of AI in Arbitration (2025), ciarb.org/media/m5dl3pha/ciarb-guideline-on-the-use-of-ai-in-arbitration-2025-_final_march-2025.pdf (last accessed May 24, 2025).

37 Chamber of Arbitration of Milan, Award No. 7813 (Sept. 28, 2001), cisg-online.org/files/cases/7501/fullTextFile/1582_59663834.pdf (last accessed May 28, 2025).

38 The “Enrica Lexie” Incident (Italy v. India), Award, PCA Case No. 2015-28 (Perm. Ct. Arb. May 21, 2020).

39 Dorsey, supra note 20.

40 Bartosz Brożek, The Black Box Problem Revisited: Real and Imaginary Challenges for Automated Legal Decision-Making, 32(1) Artificial Intelligence & L. (2023).

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

Convention[41] and the UNCITRAL rules[42]. Parties have the right to know about the process by which arbitration is conducted. However, in the case of AI, the awards are passed through complex algorithms and training biases, which makes it next to impossible to trace the logic behind the given award. When an aggrieved party would wish to challenge the award, it would not be possible to ascertain what exactly was the logic given behind the award, a logic that every party is entitled to know. These awards also operate as precedents, but if no logic is clearly visible in the given award, the concept of precedents would hold little to no significance.

Therefore, it's clear that an AI process cannot yet be the end for disputes containing complex issues and requiring niche understanding of different aspects of international and local law. For example, a dispute between corporations from countries that have a history of political hostility or generational grievances is something AI cannot yet put into perspective while passing an award. Similarly, concepts such as honour, shame, or good faith, which are deeply rooted in Western psychology, are concepts that AI is currently unable to process. [43]

4.3 The Future: Hybrid Models and Evolving Tech

As technological advancements continue to happen in the field of AI and in the field of law, it is pertinent to include it in the arbitration process. And while sole AI arbitration is still an arguable topic, there is no doubt that a hybrid model comprising a human arbitrator assisted by AI is the future , at least for now. The appeal of a hybrid model lies in the dual benefit it provides. AI brings about speed, precision and efficiency in handling large volumes of data, and a human arbitrator brings qualities such as empathy, morality and cultural understanding.[44]

This level of AI integration is already being adopted. Tools like ROSS Intelligence[45], once used for legal research using natural language processing (NLP), and Lexis+ AI or Westlaw Edge, which employ predictive analytics, have streamlined the otherwise lengthy processes of, legal research, drafting of documents and verification of extensive paperwork. In arbitration, platforms such as ArbiLex use machine learning to assess the merits of cases and forecast outcomes, while Premonition Analytics reviews arbitrator histories to suggest optimal case strategies.[46]

Moreover, advancements in Explainable AI (XAI) and sentiment analysis offer the potential to improve AI transparency and contextual understanding. XAI attempts to demystify AI outputs, a critical need in legal systems that demand due process and reasoning.[47] Sentiment analysis, while still limited, is being refined to assess emotional subtext in legal arguments—yet it continues to struggle with sarcasm, cultural idioms, and nuanced tone. These developments suggest that AI may soon become a highly intelligent assistant within arbitration proceedings. However, its role is likely to remain supportive—enhancing, but never supplanting, the human intellect and ethical judgement necessary for just and equitable outcomes.

5. Conclusion

The development of AI has caused a significant change in all forms of legal processes, which includes international commercial arbitration. The ability of AI to process vast volumes of data with a high level of accuracy and efficiency certainly proves to be a boon

41 Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention), 330 U.N.T.S. 38 (entered into force June 7, 1959), arts. V(1)(b), V(1)(d).

42 UNCITRAL Model Law on International Commercial Arbitration (adopted June 21, 1985, with amendments adopted in 2006), U.N. Doc. A/40/17 (1985), arts. 18, 19, 28, 34.

43 Ryan Jenkins, Duncan Purves & David Danks, Honor Ethics: The Challenge of Globalizing Value Alignment in AI, 5 AI & Ethics 55 (2023), doi.org/10.1007/s43681-023-00285-5.

44 Abhishek Das & Bhanu Ranjan, Assessing the Impact of Artificial Intelligence on the Arbitration Process, SSRN, papers.ssrn.com/sol3/papers.cfm?abstract_id=5038329 (last accessed May 28, 2025).

45 Schwartz-croft, supra note 13.

46 Rauch, supra note 4.

47 Karen McGregor Richmond, Satya M. Muddamsetty, Thomas Gammeltoft-Hansen, Henrik Palmer Olsen & Thomas B. Moeslund, Explainable AI and Law: An Evidential Survey, 3 Digit. Soc'y 1 (2023), link.springer.com/article/10.1007/s44206-023-00081-z (last accessed May 31, 2025).

ALGORITHMIC DECISION-MAKING IN INTERNATIONAL COMMERCIAL ARBITRATION: CAN AI EVER REPLACE THE ARBITRATOR?

in international commercial arbitration, especially in stages that require more human labour and less human intuition and expertise, such as drafting, document vetting and analysis, as well as predictive modelling. However, as we have already discussed, the notion of AI absolutely replacing an arbitrator is not yet possible due to the inherent deficiencies that AI brings.

At its core, arbitration involves the inherent human presence, which brings about elements of empathy, morality and contextual understanding of the dispute. While AI is capable of data analysis and pattern recognition, it is incapable of portraying human instinct in its outcomes. These are essential components of international arbitration, where cross-border disputes are embedded in historical, political, and emotional contexts. As AI is incapable of understanding tone, implied meanings, or subjective human experiences, it cannot replicate the decision that a human arbitrator would have otherwise given.

Legally, the enforceability of AI-generated awards is not yet clear, and international legislations such as the New York Convention and national laws like the Indian Arbitration and Conciliation Act are silent on the issue as well. Furthermore, the 'black box' issue does raise a concern regarding transparency of the process and does pose a very real threat of inherent biases within the system.

Therefore, while we cannot fully rely on AI as a sole arbitrator in international commercial arbitration, it would be a waste to completely alienate it from the process. The benefit lies in a hybrid system where the benefit of both a human and AI arbitrator can be utilised to further streamline the process, which can provide a more efficient and precise system of dispute resolution. AI can take on labour-intensive tasks that require little to no human instinct and leave the actual decision-making to a human arbitrator who can now work more efficiently due to the reduced workload.