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Artificial Intelligence as an Arbitrator: Legal and Ethical Challenges in Arbitration and Conciliation Procedure in India

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ABSTRACT

This paper examines the possibility of artificial intelligence functioning as an arbitrator in India. While AI technologies can improve speed, efficiency and document management in arbitration proceedings, their use as autonomous decision-makers raises significant legal and ethical concerns. The study analyses the Arbitration and Conciliation Act, 1996, judicial precedents, comparative international approaches and ethical concerns relating to transparency, accountability and algorithmic bias, and concludes that AI is best treated as an aid to the arbitrator rather than as a substitute for human adjudication.

Keywords: *artificial intelligence, arbitration, arbitral tribunal, algorithmic bias, online dispute resolution, arbitration and conciliation act 1996, procedural fairness, india*

I. INTRODUCTION

Arbitration in India has become an increasingly preferred method of dispute resolution because of its speed, flexibility and confidentiality. The rapid development of artificial intelligence technologies has encouraged scholars and practitioners to examine whether AI can perform adjudicatory functions traditionally performed by human arbitrators. AI tools already assist lawyers in legal research, predictive analytics and document review. However, replacing a human arbitrator with a machine raises questions relating to natural justice, due process and accountability. The Indian arbitration framework was drafted on the assumption that an arbitrator would be a natural person capable of exercising judgment and discretion.¹ This debate is particularly important for India because of its ambition to become a global arbitration hub. The issue therefore extends beyond technology and enters the domain of constitutional values, access to justice and institutional legitimacy. Consequently, the use of AI as an arbitrator presents a significant jurisprudential challenge.

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¹ Arbitration and Conciliation Act, No. 26 of 1996, §§ 11(1), 12(1), 31(3) (India) (a person of any nationality may be an arbitrator; the person approached in connection with a possible appointment must disclose circumstances likely to give rise to justifiable doubts as to independence or impartiality; and the award must state the reasons upon which it is based).

II. GROWTH OF AI IN ARBITRATION

Artificial intelligence entered arbitration first through administrative support rather than adjudication. Contemporary arbitration often involves millions of pages of records, emails, invoices and technical reports. AI systems can organise evidence, identify duplicate material and assist tribunals in understanding patterns hidden within large datasets. Translation software and speech recognition tools have further reduced costs in cross-border disputes. Several arbitral institutions now employ technology to manage filings, schedules and procedural correspondence. These developments demonstrate that technology can improve efficiency without interfering with party autonomy. The rapid advancement of artificial intelligence has significantly influenced the functioning of legal systems across the world. Arbitration, which is preferred for its efficiency and flexibility, has increasingly begun to integrate AI-based technologies to improve various stages of dispute resolution.² The growing complexity of commercial transactions and the increase in cross-border disputes have further accelerated the adoption of technological solutions in arbitration proceedings.

Initially, the use of technology in arbitration was limited to electronic communication and online document sharing. However, with the development of AI tools capable of analysing large volumes of legal information within a short period, the role of technology has expanded considerably. AI is now used for legal research, document review, contract analysis, evidence management and the prediction of possible case outcomes. Such tools assist legal professionals in reducing repetitive work and allow them to focus on legal reasoning and strategy, provided the tools are used correctly. One of the major factors contributing to the growth of AI in arbitration is the increasing demand for time-efficient and cost-effective dispute resolution mechanisms. Traditional arbitration proceedings, particularly in complex commercial disputes, often involve extensive documentation and lengthy procedural stages. AI-powered software can quickly identify relevant clauses, classify documents and detect inconsistencies in evidence, thereby reducing the time required for preliminary review and case preparation.

The COVID-19 pandemic also played an important role in accelerating the use of AI and digital technologies in arbitration. Virtual hearings, online submissions and electronic case management systems became common practice during this period,³ and the experience demonstrated that technology could effectively support proceedings without compromising

² GARY B. BORN, INTERNATIONAL COMMERCIAL ARBITRATION (3d ed. 2021).

³ *State of Maharashtra v. Praful B. Desai*, (2003) 4 SCC 601 (holding that evidence may be recorded by video conferencing and that presence under Section 273 of the Code of Criminal Procedure, 1973 does not require physical presence). The decision concerns the recording of evidence in a criminal trial and is cited only for the acceptance of remote proceedings in Indian law.

procedural fairness. Consequently, arbitral institutions and practitioners became more open to the integration of AI-based solutions. Another reason for the increasing acceptance of AI in arbitration is the growth of online dispute resolution (ODR) platforms.⁴ These platforms combine digital communication tools with AI-based systems to manage and resolve disputes in a faster and more accessible manner. Such developments are particularly useful for low-value commercial disputes where traditional arbitration may not be economically viable.

Despite its growing importance, AI is generally viewed as a supporting tool rather than a replacement for arbitrators. Arbitration often involves the interpretation of facts, the assessment of witness credibility and the application of equitable principles, all of which require human judgment and experience. The future of arbitration is therefore likely to involve collaboration between human expertise and technological innovation. The growth of AI in arbitration reflects the broader transformation taking place in the legal profession.⁵ As technology continues to evolve, arbitration is expected to become more efficient, accessible and data-driven while maintaining the essential role of human decision-making in ensuring justice and fairness.

III. ARBITRATION AND ITS LEGAL FRAMEWORK

The legal foundation governing arbitration in India is primarily provided by the Arbitration and Conciliation Act, 1996. The Act was enacted with the objective of establishing a modern and efficient dispute resolution mechanism and was largely based on the UNCITRAL Model Law on International Commercial Arbitration.⁶ Over the years, various amendments have been introduced to make arbitration more effective, transparent and business-friendly in line with international standards. The Act begins by defining important terms under Section 2, which provides clarity regarding expressions such as "arbitration", "arbitral tribunal", "arbitral award" and "international commercial arbitration". These definitions form the basis for determining the applicability and scope of the legislation in different situations. Section 7 provides for the requirement of an arbitration agreement and states that such an agreement must be in writing. The existence of a valid arbitration agreement is essential because it reflects the intention of the parties to resolve their disputes through arbitration rather than through traditional court proceedings.

Section 5 expressly limits the interference of courts in matters governed by arbitration except where such intervention is specifically permitted by the Act. This provision strengthens the

⁴ UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW, *Technical Notes on Online Dispute Resolution* (2017) (adopted at the forty-ninth session of the Commission, 2016).

⁵ RICHARD SUSSKIND, *ONLINE COURTS AND THE FUTURE OF JUSTICE* (2019).

⁶ UNCITRAL Model Law on International Commercial Arbitration arts. 1–36, June 21, 1985.

independence of the arbitral process and ensures that arbitration remains an efficient alternative to litigation.^{7,8} The composition and appointment of arbitrators are regulated under Sections 10 and 11 of the Act. While Section 10 grants the parties the freedom to determine the number of arbitrators, Section 11 empowers the courts to appoint arbitrators where the parties fail to agree upon the appointment procedure. The amendments to the Act have aimed at making this process faster and at reducing unnecessary delays. An important safeguard relating to neutrality and fairness is incorporated in Sections 12 and 13, which deal with disclosure requirements and challenges to the appointment of arbitrators. An arbitrator is required to disclose any circumstance likely to give rise to justifiable doubts as to his independence or impartiality, the Fifth and Seventh Schedules supplying the grounds by reference to which such doubts and ineligibility are assessed.⁹ These provisions seek to preserve confidence in the arbitral process and to uphold the principles of natural justice.

The arbitral tribunal has been granted substantial procedural flexibility under Section 19, which states that the tribunal is not bound by the strict rules of the Code of Civil Procedure, 1908 or the Indian Evidence Act, 1872. This flexibility enables arbitration proceedings to be conducted in a more practical and efficient manner depending upon the nature of the dispute. The tribunal is also empowered under Section 17 to grant interim measures during the pendency of arbitration proceedings. Similarly, Section 9 authorises courts to grant interim relief before, during or after the arbitral proceedings in certain circumstances. These provisions ensure the protection of the rights and interests of the parties while the dispute remains unresolved.

The arbitral award and its enforcement are dealt with under Sections 31 and 36 respectively. Section 31 lays down the essential requirements for the making of an arbitral award, including the requirement in Section 31(3) that the award state the reasons upon which it is based unless the parties have agreed that no reasons are to be given, whereas Section 36 provides that an arbitral award shall be enforced in the same manner as a decree of a civil court once the time period for challenging it has expired.¹⁰

The Act also recognises limited grounds for challenging an arbitral award under Section 34. Such grounds include lack of jurisdiction, violation of the principles of natural justice and

⁷ *Bharat Aluminium Co. v. Kaiser Aluminium Technical Servs. Inc.*, (2012) 9 SCC 552 (Constitution Bench) (holding that Part I of the Act applies only to arbitrations seated in India, and confining the supervisory jurisdiction of Indian courts accordingly).

⁸ *Vidya Drolia v. Durga Trading Corp.*, (2021) 2 SCC 1 (holding that a court at the referral stage undertakes only a prima facie examination, questions of non-arbitrability being left ordinarily to the arbitral tribunal).

⁹ Arbitration and Conciliation Act, No. 26 of 1996, §§ 12–13, scheds. V, VII (India).

¹⁰ *Id.* §§ 31(3), 36.

conflict with the public policy of India.¹¹ The restricted scope of challenge reflects the legislative intention to preserve the finality of arbitral awards and to avoid prolonged litigation.

The Arbitration and Conciliation Act, 1996 therefore establishes a comprehensive legal framework that promotes efficiency, party autonomy and speedy dispute resolution. The provisions of the Act continue to evolve through legislative amendments and judicial interpretation, making arbitration an increasingly preferred mechanism for resolving commercial and civil disputes in India. The Act also provides for a formal body known as the Arbitration Council of India, a statutory body contemplated by Part IA (Sections 43A to 43M), which was inserted by the Arbitration and Conciliation (Amendment) Act, 2019 on the recommendation of the Justice B.N. Srikrishna Committee, and which sets out the Council's composition and regulatory functions.¹²

IV. ETHICAL CHALLENGES AND ALGORITHMIC BIAS

The growing use of artificial intelligence in arbitration has introduced significant improvements in the management and resolution of disputes. AI technologies are increasingly used for legal research, document review, contract analysis, evidence management and the prediction of possible outcomes, making arbitration proceedings faster and more efficient. Along with these advantages, however, the use of AI has also raised several ethical concerns, among which algorithmic bias is one of the most significant. Since arbitration is founded upon the principles of fairness, neutrality and equal treatment of the parties, addressing these ethical challenges is essential for maintaining confidence in the arbitral process. Algorithmic bias refers to the possibility that an AI system may produce unfair or discriminatory outcomes because of the data on which it has been trained. AI systems rely heavily on historical information and previous patterns for generating recommendations and predictions. If the data used for training contains existing social, economic or institutional biases, the AI system may unintentionally reproduce those biases in its outputs. In arbitration, such bias may affect document classification, case analysis or prediction tools, resulting in unequal treatment of the parties and undermining the principle of impartiality that is central to arbitration. Another important ethical issue is the lack of transparency in AI-based decision-making processes. Many AI systems function through highly complex algorithms that are difficult for users to understand or interpret. Consequently, parties may not know the basis upon which a particular recommendation or conclusion has been

¹¹ *Id.* § 34.

¹² *Id.* pt. IA, §§ 43A–43M, inserted by the Arbitration and Conciliation (Amendment) Act, No. 33 of 2019 (India); *Report of the High Level Committee to Review the Institutionalisation of Arbitration Mechanism in India* (July 30, 2017) (Srikrishna Committee). The Council had not been constituted as at the date of writing.

reached. Since arbitration requires reasoned decisions and procedural fairness, reliance upon systems that cannot explain their reasoning creates concerns regarding accountability and trust in the arbitral process.¹³

The use of AI also raises serious concerns relating to confidentiality and data protection. Confidentiality is one of the major reasons parties prefer arbitration over litigation before courts. Arbitration proceedings often involve commercially sensitive information, trade secrets, financial records and confidential agreements. AI systems generally require large amounts of data for effective functioning, which increases the risk of cyberattacks, unauthorised access and misuse of confidential information. Adequate safeguards and cybersecurity measures therefore become essential whenever AI technologies are used in arbitration proceedings.

Another ethical challenge concerns accountability for errors generated by AI systems. If an AI tool incorrectly analyses evidence, overlooks relevant facts or provides inaccurate recommendations, determining responsibility becomes difficult. Questions may arise as to whether liability should be imposed upon the software developer, the arbitral institution, the legal representatives or the arbitrator relying upon the technology. The absence of clear legal standards governing such situations creates uncertainty regarding the allocation of responsibility.

Excessive reliance on AI may also reduce the role of human judgment in arbitration. Arbitration often requires the interpretation of facts, the assessment of witness credibility and the consideration of equitable principles, which involve human reasoning and practical experience. While AI can assist in improving efficiency and reducing repetitive tasks, it cannot completely replace the discretion and judgment exercised by arbitrators. AI should therefore be viewed as a supporting tool rather than an alternative to human decision-makers. Unequal access to advanced AI technologies may further create an imbalance between the parties. Large corporations and financially stronger parties are more likely to have access to sophisticated AI tools and legal technologies, whereas smaller businesses and individual parties may lack similar resources. Such technological inequality may affect procedural fairness and create disparities in the arbitration process.

V. CONFIDENTIALITY AND DATA PRIVACY

Artificial intelligence is increasingly used in arbitration for tasks such as document review and research, but its use raises important concerns about confidentiality and data protection because

¹³ EUROPEAN COMMISSION, HIGH-LEVEL EXPERT GROUP ON ARTIFICIAL INTELLIGENCE, *Ethics Guidelines for Trustworthy Artificial Intelligence* (2019).

arbitration often involves highly sensitive commercial and personal information. Since parties expect arbitral proceedings to remain private, any AI tool that stores, transfers or analyses case data can create risks of unauthorised access, leakage or misuse, especially where third-party platforms are involved. In addition, data protection law requires that personal data be handled lawfully, securely and only for proper purposes, so arbitrators and parties must be careful before uploading documents to AI systems.¹⁴ A practical solution is to adopt a "confidentiality by design" approach, which means building confidentiality safeguards into AI use from the outset through encryption, restricted access, audit trails, anonymisation and secure storage. Parties should also check data retention policies, obtain consent where it is needed and include clear AI and confidentiality clauses in procedural orders or terms of reference in order to avoid disputes later. The essential point is that AI should support arbitration and not weaken the trust on which it depends; innovation must always be balanced with privacy, security and legal responsibility.

VI. COMPARATIVE APPROACHES TO TECHNOLOGICAL ADVANCEMENT

The use of artificial intelligence in arbitration is developing at different speeds across jurisdictions. While some countries and arbitral institutions have actively adopted AI and formulated guidelines for its use, others are still at an early stage of discussing its legal and ethical implications. A comparative analysis of these approaches helps in understanding global trends and provides valuable lessons for countries such as India, where the legal framework governing AI in arbitration is still evolving. Among the leading jurisdictions, Singapore has emerged as one of the most technology-friendly centres for international arbitration. Institutions and practitioners in Singapore have increasingly embraced digital technologies, online hearings and AI-assisted legal research tools to improve efficiency in arbitral proceedings. Singapore's approach focuses primarily on encouraging innovation while ensuring procedural fairness and data security, and this balanced approach has strengthened its position as one of the major international arbitration hubs. The United Kingdom, by contrast, has adopted a cautious but progressive attitude towards the use of AI in dispute resolution. The emphasis in the United Kingdom has been on ensuring that AI serves as an aid to arbitrators rather than replacing human decision-making. Professional organisations and arbitration institutions have highlighted the importance of maintaining transparency, accountability and independence while integrating AI into arbitration processes.

A significant development in this area has been the issuance of guidance by the Chartered Institute of Arbitrators (CI Arb). In 2025, CI Arb introduced a comprehensive guideline on the

¹⁴ Digital Personal Data Protection Act, No. 22 of 2023 (India).

use of AI in arbitration with the object of assisting arbitrators, parties and legal representatives in using AI responsibly and ethically.¹⁵ The guideline emphasises that AI should not replace the independent judgment of arbitrators and that final responsibility for decisions must remain with human decision-makers. It also addresses concerns relating to confidentiality, procedural fairness and the enforceability of arbitral awards.

The European approach towards AI in legal processes places significant emphasis on regulation and ethical safeguards. European and international policymakers have consistently highlighted principles such as transparency, accountability and protection against algorithmic discrimination.¹⁶ The objective is to ensure that technological innovation does not compromise fundamental legal values such as fairness and the equal treatment of parties. This approach may serve as an important model for the future regulation of AI in arbitration worldwide.

India, in contrast, is still at an emerging stage with regard to the use of AI in arbitration. Although AI tools are increasingly used for legal research, document review and case management by practitioners, there are at present no specific statutory provisions under the Arbitration and Conciliation Act, 1996 dealing with the use of AI in arbitral proceedings. Indian arbitration law continues to rely upon the principles of party autonomy, procedural fairness and minimal judicial intervention, while the role of AI remains largely dependent upon professional practice and technological adoption rather than legislative regulation.

Another important distinction between developed arbitration jurisdictions and developing legal systems lies in the availability of technological infrastructure and resources. Advanced arbitration centres often possess access to sophisticated AI platforms and digital case management systems, whereas developing jurisdictions may face challenges relating to cost, technical expertise and cybersecurity. The level of AI integration consequently differs considerably across countries. Recent international studies also indicate a growing acceptance of AI within the arbitration community. According to the 2025 International Arbitration Survey conducted by the School of International Arbitration, Queen Mary University of London, in partnership with White and Case, about 90 per cent of respondents expect to use AI for legal research, data analytics and document review, and expected use of AI for arbitration data analytics rises to approximately 91 per cent within the next five years. At the same time, 77 per cent of respondents considered that AI should not be used for making decisions, and many

¹⁵ CHARTERED INSTITUTE OF ARBITRATORS, *Guideline on the Use of AI in Arbitration* (2025).

¹⁶ OECD, *Recommendation of the Council on Artificial Intelligence*, OECD/LEGAL/0449 (2019, revised 2024).

practitioners remain hesitant about allowing AI to draft arbitral awards or to perform functions requiring adjudicatory discretion and legal reasoning.¹⁷

VII. RECOMMENDATIONS FOR INDIA

India should adopt a human-in-the-loop framework in which AI supports legal research, procedural organisation and evidence analysis while final responsibility remains with the arbitrator. Regulatory standards should require explainability, regular audits and bias assessments for systems deployed in legal proceedings.¹⁸ Training programmes for arbitrators and lawyers can improve technological literacy and reduce resistance to innovation. Professional institutions should formulate ethical guidelines governing the procurement, testing and use of AI within arbitration. Legislative reform may eventually become necessary if technology reaches a level at which limited autonomous functions become viable. Until then, cautious integration remains the most sustainable path.

VIII. CONCLUSION

The emergence of artificial intelligence in arbitration marks an important development in the field of dispute resolution. The use of AI-powered technologies for legal research, document review, evidence management and case analysis has the potential to make arbitration proceedings more efficient, cost-effective and accessible. As commercial disputes become increasingly complex and international in nature, technological innovation can assist arbitrators and legal practitioners in handling disputes in a more organised and time-efficient manner.

The Supreme Court has also delivered landmark judgments in this field, holding that the unilateral appointment of a sole arbitrator is invalid, since a party that has an interest in the dispute cannot unilaterally appoint an arbitrator.¹⁹ At the same time, the integration of AI into arbitration cannot be viewed solely from the perspective of technological advancement. Arbitration is founded upon principles such as fairness, impartiality, party autonomy and procedural justice, all of which require careful protection. The possibility of algorithmic bias, the lack of transparency in AI systems, concerns relating to confidentiality and data security, questions of accountability and unequal access to technological resources present significant challenges that must be addressed before AI can be more extensively incorporated into arbitral proceedings. The existing legal framework under the Arbitration and Conciliation Act, 1996 provides a strong foundation for the conduct of arbitration in India through principles such as

¹⁷ SCHOOL OF INTERNATIONAL ARBITRATION, QUEEN MARY UNIVERSITY OF LONDON & WHITE & CASE LLP, 2025 *International Arbitration Survey: The Path Forward* (2025).

¹⁸ NITI AAYOG, *National Strategy for Artificial Intelligence* (June 2018).

¹⁹ *Perkins Eastman Architects DPC v. HSCC (India) Ltd.*, (2020) 20 SCC 760.

minimal judicial intervention, the independence of arbitrators and the finality of awards. The Act does not, however, presently contain specific provisions dealing with the use of artificial intelligence in arbitration. Future legislative developments and institutional guidelines may therefore become necessary to regulate the ethical and responsible use of AI while preserving the integrity of the arbitral process. The comparative experiences of jurisdictions such as Singapore and the United Kingdom, and of various international arbitral institutions, demonstrate that the successful use of AI depends upon maintaining an appropriate balance between technological efficiency and human judgment. These jurisdictions recognise that AI should function as an aid to arbitrators rather than as a substitute for human reasoning, discretion and legal analysis. From the perspective of this research, it may be concluded that, although artificial intelligence is likely to become an important component of the future of arbitration, the ultimate responsibility for ensuring justice, fairness and impartiality should continue to rest with human arbitrators and legal professionals. The objective should not be to replace human decision-makers but to enhance their ability to resolve disputes effectively and efficiently.

This paper has been prepared solely for academic and educational purposes and reflects the understanding, interpretation and analysis of the researcher based on the materials and sources referred to during the study. The views expressed are personal academic observations made in the course of research and are not intended to comment upon, criticise, offend or abuse any individual, institution, organisation or legal system.
