

## Artificial Intelligence and Its Future in Arbitration

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### Abstract

*This paper examines Artificial Intelligence and its future in arbitration. Although the use of artificial intelligence is not widespread in arbitration and come with several teething problems, the benefits that it offers the practice of arbitration are numerous. This is because, when it is embraced with an open mind, albeit with caution as well, artificial intelligence has the potential to revolutionize the practice of arbitration in the present as well as into the future. Specific attention is drawn to the numerous potentials that artificial intelligence offers towards achieving access to justice.*

*This paper is broken down into seven sections. The first section introduces the paper by giving an overview of the use of technology in arbitration, defining key terms, setting out the objectives of the paper, as well as its limitations. The second part traces the background of the use of technology in arbitration. The third part discusses artificial intelligence and access to justice. The fourth part examines challenges that have been faced in the use of artificial intelligence in arbitration. The fifth part highlights opportunities for improvements. The sixth part presents a case for future use of artificial intelligence in arbitration. The final part concludes the findings in the paper.*

*The aim of this paper is to examine the current experiences of the use of artificial intelligence in the practice of arbitration, to highlight opportunities for improvements, and to ultimately present a case for the future of artificial intelligence in arbitration.*

## I. Introduction

### I.1 Overview of Technology in Arbitration

While arbitration is often famed for its relatively high speed to litigation, more disputes that are increasingly complex in nature are being presented before it thereby rendering this speed trait illusionary by the day.<sup>1</sup> To maintain all the efficient characteristics of the arbitral process that has endeared it to the hearts of many parties that continue to seek resolution of their disputes through it, especially in this modern times, the use of technology and technical aids is becoming ever more necessary.<sup>2</sup>

The use of technology in arbitration has been rising alongside the use of technology in the legal profession as a whole,<sup>3</sup> an aspect that has been truly rapid and far-reaching in its impact over the years.<sup>4</sup> However, the flexible nature of the framework governing arbitration has presented an even better incentive for the

<sup>1</sup> Thomas D. Halket, 'The Use of Technology in Arbitration: Ensuring the Future is Available to Both Parties' (2007) 81 (269) *St. John's Law Review* Available at: [http://www.halketweitz.com/use\\_of\\_technology\\_in\\_arbitration.pdf](http://www.halketweitz.com/use_of_technology_in_arbitration.pdf) (Last Accessed on November 16, 2019)

<sup>2</sup> Ibid

<sup>3</sup> Thomas Schultz, 'Information Technology and Arbitration: A Practitioner's Guide' (2006) *Kluwer Law International* Available at: [https://books.google.co.ke/books?hl=en&lr=&id=Zto0c7nXKwoC&oi=fnd&pg=PA6&dq=using+technology+in+arbitration&ots=rSwzanj9G-&sig=SfygkOS7B8\\_oTbxNCTcg5pZml&redir\\_esc=y#v=onepage&q=using%20technology%20in%20arbitration&f=true](https://books.google.co.ke/books?hl=en&lr=&id=Zto0c7nXKwoC&oi=fnd&pg=PA6&dq=using+technology+in+arbitration&ots=rSwzanj9G-&sig=SfygkOS7B8_oTbxNCTcg5pZml&redir_esc=y#v=onepage&q=using%20technology%20in%20arbitration&f=true) (Last Accessed on November 16, 2019)

<sup>4</sup> Richard Susskind, 'The future of law: facing the challenges of information technology' (1998) *Oxford University Press*

use of technology to thrive in arbitration than it would in other mechanisms of dispute resolution.<sup>5</sup> Over the years therefore, the use of technology in arbitral procedures has become unstoppable.<sup>6</sup>

## 1.2 Definition of Key Terms

Some of the key terms and concepts that have been employed in this paper can be defined as follows:

- a) Arbitration – According to general consensus of judicial pronouncements and statutory provisions, it is defined as a process for hearing and deciding disputes of economic implications which arise between parties who depending on an agreement between them, submit their claims to one or more persons they choose to serve as an arbitrator.<sup>7</sup>
- b) Technology – Is defined as a branch of knowledge, or the results of application of science, the study of techniques, practice, or an activity.<sup>8</sup> Its definition has widely been accepted to be rather vague in its nature.<sup>9</sup>
- c) Technical Aids – This is a term that is used to refer to information and communication technology equipment and services which are used to accomplish a certain task.<sup>10</sup>
- d) Artificial Intelligence (AI) – It is defined as a computer systems or programs that are designed to perform tasks that are ordinarily performed through the human intellect in an arbitrary world.<sup>11</sup> Simply put, it is the exhibition of intellectual traits that are conventionally associated with humans by a machine in its tasks.
- e) Information Technology (IT) – Is defined as both computer software and hardware solutions which provide support of management, strategists, as well as operations in an organisation in order to increase its productivity.<sup>12</sup>

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<sup>5</sup> Ibid Schultz, (n3)

<sup>6</sup> Ibid

<sup>7</sup> Wesley A. Sturges, 'Arbitration – What is it' (1960) 35 *New York University Law Review*, Page 1031 Available at: [https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=4305&context=fss\\_papers](https://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=4305&context=fss_papers) (Last Accessed on November 16, 2019)

<sup>8</sup> Brian Arthur, 'The nature of technology: What it is and how it evolves' (2009) *Simon and Schuster* Available at: [https://books.google.co.ke/books?hl=en&lr=&id=3qHsXYXN0EC&oi=fnd&pg=PA1&dq=what+is+technology&ots=5YTdlJ7Tu7&sig=FP1-lpJCDuKAU-gy6z-loHtiew&redir\\_esc=y#v=onepage&q=what%20is%20technology&f=false](https://books.google.co.ke/books?hl=en&lr=&id=3qHsXYXN0EC&oi=fnd&pg=PA1&dq=what+is+technology&ots=5YTdlJ7Tu7&sig=FP1-lpJCDuKAU-gy6z-loHtiew&redir_esc=y#v=onepage&q=what%20is%20technology&f=false) (Last Accessed on November 16, 2019)

<sup>9</sup> Ibid

<sup>10</sup> Ibid Halket, (n1) Available at: [http://www.halketweitz.com/use\\_of\\_technology\\_in\\_arbitration.pdf](http://www.halketweitz.com/use_of_technology_in_arbitration.pdf) (Last Accessed on November 16, 2019) It should be noted that this term will be used in this paper to refer to the various technological assistances that is used in the arbitral process

<sup>11</sup> Dimiter Dobrev, 'A Definition of Artificial Intelligence' (2004) *Institute of Mathematics and Informatics, Bulgaria Academy of Sciences*. Available at: <https://arxiv.org/pdf/1210.1568.pdf> (Last Accessed on November 16, 2019)

<sup>12</sup> Choo Wou Onn, and Shahryar Sorooshian, 'Mini literature analysis on information technology definition' (2013) 3(2) *Information and Knowledge Management*, Page 139-140 Available at: <https://pdfs.semanticscholar.org/0333/904fd80b3cc67decd855dffa21e9f7c8732b.pdf> (Last Accessed on November 17, 2019)

### 1.3 Objectives of the Paper

This paper is aimed at achieving the following objectives: To examine the place of technology as a whole and artificial intelligence in particular in arbitration. To interrogate the benefits of artificial intelligence in providing access to justice through arbitration. To investigate the criticisms levelled against the use of artificial intelligence in arbitration. To analyse the various opportunities available for improvement in the use of artificial intelligence in arbitration. And finally, to present a case for the future of artificial intelligence in arbitral practices.

### 1.4 Limitations of the paper

This paper is restricted to the examination of artificial intelligence especially with regards to its use in arbitration as well as its future in arbitration practices. The paper does not render itself to the examination of any others aspects of artificial intelligence or arbitration outside this scope.

## 2.0 Background of the Use of Technology in Arbitration

The onset of the use of technology in general and artificial intelligence in particular in the practice of arbitration can be traced back to the global movement in embracing internet use especially with regards to use in the legal field.<sup>13</sup> Additionally, the use of technology has been argued to have flourished more in arbitration as compared to litigation due to the fact that arbitration is not burdened by the procurement and implementation nightmares that bedevil large institutions like the court when it comes to acquiring and capitalizing on technology.<sup>14</sup> These observations therefore explain the onset of the use of technology in arbitration as well as factors that have made it a success.

Despite all these attractive features associated with the use of technology in arbitration, it is important to note that the use of information technology in the facilitation of arbitral processes is still at an infancy stage.<sup>15</sup> However, there is pressure building in the international commercial arbitration space from clients who believe that the same technology that has changed the way in which global commerce operates should also be able to aid the resolution of their disputes with the same speed and efficiency.<sup>16</sup> Nevertheless, there is an important caution against the use of technology to contravene procedural safeguards and compromise the quality of justice.<sup>17</sup>

All these factors considered, it is indeed correct to observe that as of today, the use of information technology has gathered a considerable momentum and that major arbitral institutions are increasingly embracing it in practice.<sup>18</sup> Therefore, while the use of technology in arbitration is a prospectively attractive

<sup>13</sup> Jasna Arsic, 'International Commercial Arbitration on the Internet: Has the Future Come Too Early?' (1997) 14(3) *Journal of International Arbitration* Available at: <https://heinonline.org/HOL/LandingPage?handle=hein.kluwer/jia0014&div=33&id=&page=> (Last Accessed on November 16, 2019)

<sup>14</sup> Tyrone L. Holt, 'Whither Arbitration – What Can be Done to Improve Arbitration and Keep out Litigation's Ill Effects' (2008) 7 *DePaul Bus. & Comm. LJ*. Page 455 Available at: <https://via.library.depaul.edu/cgi/viewcontent.cgi?article=1120&context=bclj> (Last Accessed on November 16, 2019)

<sup>15</sup> Gabrielle Kaufmann-Kohler, and Thomas Schultz, 'The Use of Information Technology in Arbitration' (2005) Available at: <http://lk-k.com/wp-content/uploads/The-Use-of-Information-Technology-in-Arbitration.pdf> (Last Accessed on November 17, 2019)

<sup>16</sup> Ibid

<sup>17</sup> Ibid

<sup>18</sup> See steps taken by the International Chamber of Commerce (ICC) in embracing the use of Information Technology in its arbitral processes. Available at: <https://iccwbo.org/publication/information-technology-international-arbitration-report-icc-commission-arbitration-adr/> (Last Accessed on November 17, 2019)

phenomenon that is still developing all around the world, players in the field are seeing opportunities in this and are already embracing information technology in their arbitral practices.

### 3.0 Artificial Intelligence and Access to Justice

#### 3.1 Attractive Attributes of AI in Access to Justice

In a simple contextual way, artificial intelligence can be said to be instances in which machines exhibit traits of intelligence that is otherwise associated with humans in the course of their work.<sup>19</sup> The essence of AI has been summarised down to its ability to be able to make required generalizations in a timely manner relying on limited data.<sup>20</sup> Machines that exhibit artificial intelligence characteristics are often capable of performing a lot of tasks that people simply can't do thereby exhibiting traits of intelligence.<sup>21</sup>

#### 3.2 AI in the Legal Profession

In the legal profession in general, AI has come in with aspects of natural language processing, machine learning, as well as a host of data-driven analysis to challenge the traditional conceptions of human legal experts.<sup>22</sup> AI is therefore already being hailed for the tremendous disruption<sup>23</sup> that it has caused and is likely to continue causing in the legal professional.<sup>24</sup> Specific areas of impact that AI has influenced in the legal field thus far include; issues of discovery, aspects of legal search, generation of documents, generation of briefs, and the prediction of outcomes of cases.<sup>25</sup>

#### 3.3 AI in Arbitration

In arbitration, AI has been described to be most necessary in international arbitration due to the typically complex nature of the cases that are presented before international arbitration.<sup>26</sup> AI is touted to have the capacity to carry out the analysis of the bulky data before an international arbitral proceedings and most

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The ICC Commission on Arbitration and ADR also has a report titled 'Information Technology in International Arbitration' Available at: <https://iccwbo.org/content/uploads/sites/3/2017/03/icc-information-technology-in-international-arbitration-icc-arbitration-adr-commission.pdf> (Last Accessed on November 17, 2019)

<sup>19</sup> There is really no agreement on an all-encompassing definition of AI as presented by different scholars in their works. However, the simplest way to understand it is by considering the works of a machine that exhibit some intelligence in the way it has been carried out or in the way the end result has been arrived at. This in a nutshell, can be considered to be artificial intelligence.

<sup>20</sup> Jerry Kaplan, 'Artificial Intelligence: What Everyone Needs to Know' (2016) *Oxford University Press* Available at: [https://books.google.co.ke/books?hl=en&lr=&id=7y\\_KDAAAQBAJ&oi=fnd&pg=PP1&ots=gIKluDZpZr&sig=SQak7A\\_bDVOHhBdn-GFsG64I2Dg&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.ke/books?hl=en&lr=&id=7y_KDAAAQBAJ&oi=fnd&pg=PP1&ots=gIKluDZpZr&sig=SQak7A_bDVOHhBdn-GFsG64I2Dg&redir_esc=y#v=onepage&q&f=false) (Last Accessed on November 17, 2019)

<sup>21</sup> Ibid

<sup>22</sup> Benjamin Alarie, Anthony Niblett, and Albert H. Yoon, 'How artificial intelligence will affect the practice of law' (2018) 68 *University of Toronto Law Journal*, Page 106-124 Available at: <https://tspace.library.utoronto.ca/bitstream/1807/88092/1/Alarie%20Artificial%20Intelligence.pdf> (Last Accessed on November 17, 2019)

<sup>23</sup> Disruption, especially with regards to technology means innovations which alter existing operations in a field in a manner that is regarded to be significant.

Also see: <https://www.investopedia.com/terms/d/disruptive-technology.asp> (Last Accessed on November 17, 2019)

<sup>24</sup> Ibid Alarie, Niblett, and Yoon, (n22)

<sup>25</sup> John O. McGinnis, and Russell G. Pearce, 'The great disruption: How machine intelligence will transform the role of lawyers in the delivery of legal services' (2019) 82(6) *Fordham Law Review*

Available at:

<https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=5007&context=flr> (Last Accessed on November 17, 2019)

<sup>26</sup> Maxi Scherer, 'International Arbitration 3.0 – How Artificial Intelligence Will Change Dispute Resolution' (2018) *Austrian Yearbook of International Arbitration* Available at: [https://papers.ssrn.com/sol3/Data\\_Integrity\\_Notice.cfm?abid=3377234](https://papers.ssrn.com/sol3/Data_Integrity_Notice.cfm?abid=3377234) (Last Accessed on November 17, 2019)

importantly arrive at a rational decision which is free from cognitive biases.<sup>27</sup> However, an important question has been raised with regards to the actual utility of the machine learning nature of AI that enables it to predict outcomes in similar cases in international arbitration especially considering the fact that international arbitration proceedings are non-repetitive in nature.<sup>28</sup>

Other aspects of arbitration that have been connected to increased utilisation of artificial intelligence include; detection of corruption and negative influences on the part of the arbitrator(s), promotion of diversity in appointment of arbitral panels, and arbitration of smart contracts.<sup>29</sup> AI can be utilised through the use of specific algorithms to detect red flags of corruption in arbitral processes, to make the process of appointment of arbitrators more open using automated short lists of arbitrators, as well as in enhancing the arbitral process in smart contracts through the use of robots.<sup>30</sup>

Further utilities of AI in arbitration is with regards to the review of very long and intricately detailed contracts to make appropriate recommendations of the seat of arbitration and compatible arbitral institutions.<sup>31</sup> To this end, AI is seen as having the ability to reduce the inordinate amounts of tasks before humans in arbitral proceedings especially bearing in mind midnight clauses.<sup>32</sup> AI has also been argued to be able to efficiently scrutinize arbitral awards to enhance its chances of recognition as well as enforcement by checking to see whether the arbitral tribunal has complied with the requisite procedural formats and whether the tribunal has attended to every questions raised by the parties among other methods in a manner that is faster and more efficient than human capacities.<sup>33</sup>

So, the use of AI in arbitration in general and international arbitration in particular can be summarized as follows: AI has the ability to provide enhanced representation to parties by augment the human cognitive abilities and automating tasks that would otherwise consume huge amounts of time through human labour.<sup>34</sup> AI could also smoothen the adjudication process in arbitration by enhancing the non-biased appointment of arbitrators and reviewing awards to ensure they are water-tight.<sup>35</sup> AI could also help third parties e.g. third party funders to have the necessary insights about arbitral cases at their fingertips in

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<sup>27</sup> Ibid

<sup>28</sup> Ibid

<sup>29</sup> Lito Dokopoulou, 'Arbitration X Technology: A Call for Awakening?' (2019) *Kluwer Arbitration Blog* Available at: [http://arbitrationblog.kluwerarbitration.com/2019/01/14/arbitration-x-technology-a-call-for-awakening/?doing\\_wp\\_cron=1573976511.5388379096984863281250](http://arbitrationblog.kluwerarbitration.com/2019/01/14/arbitration-x-technology-a-call-for-awakening/?doing_wp_cron=1573976511.5388379096984863281250) (Last Accessed on November 17, 2019)

<sup>30</sup> Ibid

<sup>31</sup> Ibrahim Shehata, 'The Marriage of Artificial Intelligence & Blockchain in International Arbitration: A Peak into the Near Future!!!' (2018) *Kluwer Arbitration Blog* Available at: <http://arbitrationblog.kluwerarbitration.com/2018/11/12/the-marriage-of-artificial-intelligence-blockchain-in-international-arbitration-a-peak-into-the-near-future/> (Last Accessed on November 17, 2019)

<sup>32</sup> The term 'Midnight Clause' is used to refer to arbitration provision/clause in contracts that is often inserted at the end of the contract document when memorialising the final terms of the deal, making it appear like an afterthought long into the process. Hence the reference to midnight. Also see: Nancy Holtz, 'Beware the midnight clause: Hold the champagne?' (2016) Available at: <https://www.jamsadr.com/files/uploads/documents/articles/holtz-insidecounsel.com-beware-the-midnight-clause.pdf> (Last Accessed on November 17, 2019)

<sup>33</sup> Ibid Shehata, (n31)

<sup>34</sup> Lucas Bento, 'International Arbitration and Artificial Intelligence: Time to Tango?' (2018) *Kluwer Arbitration Blog* Available at: <http://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/> (Last Accessed on November 17, 2019)

<sup>35</sup> Ibid

order to make more informed decisions about cases to fund for example.<sup>36</sup> It is impressive to also note that in the long run, all these AI interventions are likely to reduce the cost of arbitration for the parties.<sup>37</sup>

### 3.4 Benefits of AI Towards Enhancing Access to Justice

The use of artificial intelligence towards access to justice has presented numerous benefits some of which can be highlighted as follows: Firstly, AI has recorded better performance than humans at rule-based tasks such as electronic discovery of documents with even a higher accuracy.<sup>38</sup> This is a clear advantage as far as reduction of workload is concerned towards creating access to justice.

Another crucial benefit of AI in as far as access to justice is concerned is with regards to the issue of cost of the adjudication process on the parties seeking determination of their matter.<sup>39</sup> AI is likely to reduce the cost of access to justice by reducing the labour and time factor that often increase the costs<sup>40</sup> and this is likely to open up and make the pursuit of justice affordable to more people who ordinarily need the justice system more than the justice providers who control it.<sup>41</sup>

Apart from electronic discovery, review of arbitral awards, appointment of arbitrators, reducing the cost of access to justice and all the benefits of AI discussed above, AI can also be used in the management of legal processes towards an efficient access to justice in the long run.<sup>42</sup> This is built primarily around data-driven efficiencies that curb all forms of wastages be it in time, labour or other aspects of efficiency towards access to justice.<sup>43</sup> These in a nutshell, are some of the benefits of using AI towards achieving a more efficient access to justice.

### 4.0 Challenges Experienced in The use of Artificial Intelligence in Arbitration

One point of concern that has been raised with regards to the use of AI in arbitration is the danger of susceptibility to cyberattacks and hacking.<sup>44</sup> This threat backed by the confidential nature of arbitration poses great financial and reputational risks to arbitrators as well as the parties to the arbitral process.<sup>45</sup>

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<sup>36</sup> Ibid

<sup>37</sup> The researcher makes this inference based on the assumption that the reduction in labour and time that is occasioned by the use of AI in arbitration is likely to translate in less money spent on labour and time throughout the arbitral process.

<sup>38</sup> Mark McKamey, 'Legal Technology: Artificial Intelligence and the future of law practice' (2017) 22 *Appeal Law Journal* Available at:

<https://static1.squarespace.com/static/59bb4f5dc027d80ba3e5be79/t/5ac41e6c8a922d149605ee8c/1522802285716/SSRN-id3014408.pdf> (Last Accessed on November 17, 2019)

<sup>39</sup> Darin Thompson, 'Creating New Pathways to Justice Using Simple Artificial Intelligence and Online Dispute Resolution' (2015) *Osgoode Legal Studies Research Paper Series* Available at: <http://digitalcommons.osgoode.yorku.ca/cgi/viewcontent.cgi?article=1151&context=olsrps> (Last Accessed on November 17, 2019)

<sup>40</sup> See Cit. no. 37

<sup>41</sup> Ibid Thompson, (n39)

<sup>42</sup> Ronald W. Staudt, and Andrew P. Medeiros, 'Access to Justice and Technology Clinics: A 4% Solution' (2012) 88 *Chi-Kent Law Review* Available at:

[https://scholarship.kentlaw.iit.edu/cgi/viewcontent.cgi?article=3326&context=fac\\_schol](https://scholarship.kentlaw.iit.edu/cgi/viewcontent.cgi?article=3326&context=fac_schol) (Last Accessed on November 17, 2019)

<sup>43</sup> Ibid

<sup>44</sup> Rich Barker, and Calum Mackenzie, 'Technology: Coming for A Job Near You?' (2019)

Available at: <https://www.accuracy.com/perspectives/tech-in-arbitration> (Last Accessed on November 17, 2019)

<sup>45</sup> Ibid

Secondly, whereas some awards e.g. some unredacted ones in investor-state arbitration are often published, there is still a widespread lack of access to full reasoning of awards, and names of arbitrators, counsels, and experts thereby constituting insufficient data for AI analysis.<sup>46</sup> This is a challenge because AI relies on this analysis to predict results in international arbitration.<sup>47</sup>

Thirdly, while there have been pretty decent arguments with regards to AI reducing human biases in the arbitral process e.g. in the choice of arbitral panel,<sup>48</sup> it is important to make the observation that AI also comes with some biases that have been observed in its operations in other fields.<sup>49</sup> A good example of this is the patten by algorithms on LinkedIn that have constantly advertised less paying jobs to women on the platform.<sup>50</sup> This present a worrying concern with regards to the use of AI in arbitration especially considering that the eradication of existing biases in arbitration has been one of the points that have been used to drum support for the adoption of AI.

Another challenge with regards to the use of AI in the arbitral process lies in whether AI is able to meet the fundamental requirement of due process.<sup>51</sup> Whereas AI can be effectively programmed to manage the hearing, submissions, and all the procedural requirements of an arbitral process quite effectively, questions still remain as to whether it can offer the flexibility that comes with a human arbitrator to be able to appropriately modify procedures.<sup>52</sup> This therefore, forms another limitation to the utility of AI in arbitral proceedings.

## 5.0 Opportunities for Improvements

The Promise Of Ai in arbitration is that it has the ability to provide increased access to information regarding chances of success of claims, the best strategies that can be employed in arbitral processes for higher chances of success, a non-biased selection of arbitral panels, and other relevant issues that allow participants of an arbitral process to effectively participate in the process at a lower cost.<sup>53</sup> Notwithstanding all the challenges associated with the use of AI in arbitration that have been presented in the previous section, there is indeed a place for AI in the practice of arbitration. To this end therefore, opportunities for improvements of challenges facing AI in arbitration can be presented as follows.

With the increasing and high-profile cases and threats of cyberattacks in arbitration,<sup>54</sup> actors in the arbitral space should undertake their obligations to ensure that they pay heed to cybersecurity and establish and

<sup>46</sup> Kathleen Paisley, and Edna Sussman, 'Artificial Intelligence Challenges and Opportunities for International Arbitration' (2018) 11(1) *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> (Last Accessed on November 17, 2019)

<sup>47</sup> Ibid

<sup>48</sup> Ibid *Dokopoulou*, (n29)

<sup>49</sup> Hope Reese, 'Bias in Machine Learning, and how to stop it' (2016) *Tech Republic*

Available at: <http://www.techrepublic.com/article/bias-in-machine-learning-and-how-to-stop-it/> (Last Accessed on November 17, 2019)

<sup>50</sup> Ibid

<sup>51</sup> Christine Sim, 'Will Artificial Intelligence Take Over Arbitrators?' (2018) *Asian Journal of International Arbitration (Forthcoming)* Available at:

[https://www.academia.edu/36646259/Will\\_Artificial\\_Intelligence\\_Take\\_Over\\_Arbitrators\\_2018\\_forthcoming\\_Asian\\_Journal\\_of\\_International\\_Arbitration](https://www.academia.edu/36646259/Will_Artificial_Intelligence_Take_Over_Arbitrators_2018_forthcoming_Asian_Journal_of_International_Arbitration) (Last Accessed on November 17, 2019)

<sup>52</sup> Ibid

<sup>53</sup> Ibid *Paisley, and Sussman*, (n46)

<sup>54</sup> This is in reference to the hacking of the website of the Permanent Court of Arbitration during a hearing session of a sensitive matter between China and Philippines. Also see: Claire Morel de Westgaver, 'Cybersecurity in

follow procedures that ensure proper storage and transmission of sensitive information throughout the arbitral process to mitigate threats in this digital world.<sup>55</sup> Arbitrators as well as legal counsel in the arbitral process should endeavour to remember at all times that protection of client confidences forms part of competent representation.<sup>56</sup>

With regards to biases contained in the algorithms deployed by artificial intelligence, one way to improve this is by putting in more awareness with regards to the data that is being fed into machine learning to curb the generation of algorithms which are biased.<sup>57</sup> In addition to this, there needs to be diversity in the field of machine learning to be able to recognise bias in AI and remedy the same in order to have non-biased results.<sup>58</sup>

With regards to the challenges that AI face in failing to more accurately meet outcomes of similar matters due to lack of sufficient info regarding previous awards, it is important to realise that this will take time to realise due to the largely confidential nature of arbitration and also due to the fact that many developments in AI are also still at an infancy stage.<sup>59</sup> However, AI can still be fully utilised for tasks that require analytical processing in arbitration, an area in which it has demonstrated excellence.<sup>60</sup>

## 6.0 A Case for Future Use

Having discussed the background of AI in arbitration, the role of AI in facilitating access to justice, the challenges that come with the use of AI in arbitration, as well as opportunities for improvements on these challenges, it is critical to now turn to the big question; what is the role of AI in the future of arbitration, if any?

*Kathleen Paisley, and Edna Sussman argue in their article that:<sup>61</sup>  
“Whether we like it or not, artificial intelligence is going to play a major role in international arbitration in the near future. The amounts at issue are too high and the benefits from artificial intelligence too great to avoid.”<sup>62</sup>*

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International Arbitration – A Necessity and An Opportunity for Arbitral Institutions’ (2017) *Kluwer Arbitration Blog* Available at: <http://arbitrationblog.kluwerarbitration.com/2017/10/06/cyber-security/?print=pdf> (Last Accessed on November 17, 2019)

<sup>55</sup> Jim Pastore, ‘Practical Approaches to Cybersecurity in Arbitration’ (2017) 40(3) *Fordham International Law Journal* Available at: <https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=2658&context=ilj> (Last Accessed on November 17, 2019)

<sup>56</sup> Ibid

<sup>57</sup> Susan Leavy, ‘Gender bias in artificial intelligence: the need for diversity and gender theory in machine learning’ (2018)

Available at: [https://www.researchgate.net/publication/326048883\\_Gender\\_bias\\_in\\_artificial\\_intelligence\\_the\\_need\\_for\\_diversity\\_and\\_gender\\_theory\\_in\\_machine\\_learning/link/5bce138aa6fdcc204a001d87/download](https://www.researchgate.net/publication/326048883_Gender_bias_in_artificial_intelligence_the_need_for_diversity_and_gender_theory_in_machine_learning/link/5bce138aa6fdcc204a001d87/download) (Last Accessed on November 17, 2019)

<sup>58</sup> Ibid

<sup>59</sup> AI, like any other technology is ever-evolving and has not yet acquired wide and established usage. As such it is widely considered to still be at a developmental stage.

<sup>60</sup> Ibid *Sim*, (n51)

<sup>61</sup> Ibid *Paisley, and Sussman*, (n46)

<sup>62</sup> Ibid



This pretty much sums up the place of AI and the future of its use in arbitration. But most importantly, it also draws attention to considerations that actors in the arbitration field must bear in mind even as they consider the utility of AI going forward; for whom is AI useful in an arbitral process? What are the cost implications of using AI in arbitration? What impact is the use of AI likely to have on arbitration both positively as well as negatively?

But going forward, there have already been discussions within the arbitration community regarding the many ways in which AI can be incorporated into the practice of arbitration for now and into the future.<sup>63</sup> Some of the exciting propositions include the following: One is the use of augmented reality in arbitral proceedings especially with regards to demonstration of technical matters to provide the arbitral tribunal with a good perspective during submissions and hearings.<sup>64</sup> The second one is the use of instant translation services on an application which will come in really handy in international arbitration specifically with regards to cross-border language issues.<sup>65</sup> Another exciting frontier is the use of real time analytics and AI for fast and efficient data processing and analysis especially in arbitral proceedings where the volumes of documents are overwhelming.<sup>66</sup>

It is therefore, sufficiently clear that artificial intelligence certainly has a place in the future of arbitration. It is also evident that aspects of AI are already in operation in arbitral practices especially in international arbitration. All these coupled with more exciting possibilities of interactions between AI and arbitration, some of which have been highlighted above, paint a picture of a very promising future for the utility of AI in arbitration. While some benefits are already visible even in current use of AI in arbitration, what lies ahead will always be more exciting. The challenges for the future however, lie in the adoption and the use of AI widely by actors in the arbitration field. As Geneva Sekula aptly quotes in her article:<sup>67</sup>

“The future is already here; it’s just not evenly distributed”<sup>68</sup>

## 7.0 Conclusion

In her conference report, Lito Dokopoulou quotes a very powerful statement made by one of the speakers at the conference:<sup>69</sup>

“Arbitration by humans is not over yet”<sup>70</sup>

This statement so simply and aptly captures the fears, worries, and concerns that go through the minds of actors in the arbitral field whenever they hear about the current use or the future plans to use artificial intelligence in arbitration. However, it must be remembered that AI does not possess, or has not yet

<sup>63</sup> See the discussions of the ICCA 2018 conference in Sydney, specifically the discussions of panel 12(a) titled ‘The Moving Face of Technology; Technology as Disruption – Sub Panel on Artificial Intelligence’ Available at: [https://www.arbitration-icca.org/conferences-and-congresses/ICCA\\_SYDNEY\\_2018-video-coverage/ICCA\\_SYDNEY\\_2018-Panel\\_12A.html](https://www.arbitration-icca.org/conferences-and-congresses/ICCA_SYDNEY_2018-video-coverage/ICCA_SYDNEY_2018-Panel_12A.html) (Last Accessed on November 17, 2019)

<sup>64</sup> Geneva Sekula, ‘ICCA Sydney: The Moving Face of Technology’ (2018) *Kluwer Arbitration Blog* Available at: <http://arbitrationblog.kluwerarbitration.com/2018/04/18/icca-sydney-moving-face-technology/> (Last Accessed on November 17, 2019)

<sup>65</sup> Ibid

<sup>66</sup> Ibid

<sup>67</sup> Ibid Sekula, (n64)

<sup>68</sup> Ibid

<sup>69</sup> See cit. no. 29

<sup>70</sup> Ibid

mastered rather, some inherently human attributes such as empathy, emotional intelligence, fairness, and trust which are still essential components in resolution of disputes between humans.<sup>71</sup> To this end there is no cause for alarm about AI replacing humans in arbitration and as such AI should therefore be approached with an open mind.

This paper has widely interrogated and examined the use of AI in arbitration and it is quite evident that whereas the use of AI in arbitral processes pose some challenges and exhibit some teething problems, the potential advantages that come with it are also enormous. A lot of benefits can therefore be realised for arbitration when actors in the field embrace the use of AI in their practices while of course being mindful of any potentially negative effects associated with it.

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<sup>71</sup> *Ibid Sekula, (n64)*

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