The Use of AI in Arbitral Proceedings

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Abstract

This research paper aims to explore, a concept once considered distant and remote, the usage of artificial intelligence ("AI") in arbitral proceedings. The sphere of arbitration has, to date, been regarded as one that is inherently conservative, where change and development has been slow. This essay endeavors to demonstrate that the recent wave of the technological revolution has now made it difficult for arbitration to stay far behind and carry-on obsolete practices. However, this is not without challenges, therefore, the author seeks to strike a balance between the advantages and disadvantages of AI in arbitration, without undermining the essence of the arbitral process. Resultantly, it is argued that its usage needs to be gradually phased in. The discipline referred to in this paper concerns and addresses the realm of International Commercial Arbitration.

Keywords: arbitration, artificial intelligence, alternate dispute resolution, New York Convention, AI in Legal Services Summit, and legal decisionmaking

I. INTRODUCTION

"Everything has been said, and one comes too late since Men, for more than seven thousand years, exist and think." [1]

Pierre Lalive muses that this famous sentence can be applied to the field of international commercial arbitration, where nearly everything indeed seems to have been said.[2] Admittedly, however, while perusal of prevailing texts on the subject matter seems to give the impression that much has been said about the potential involvement of AI in arbitration, it is noted that most of the literature is scattered and speculative.[3]

The utility of AI in day-to-day living has garnered immense significance in our day-to-day living. For example, AI is used to filter spam emails, write newspaper articles, and provide medical diagnoses.[4] More relatable to readers may be the algorithms used by social media platforms and applications such as Facebook and Instagram, that display content and advertisement personalized and catered to each individual user according to their preferences. More specifically, within the legal sphere and in international commercial arbitration, though in its primitive stages, the usage of AI in arbitration has already commenced, as will be illustrated in this paper, and is no more the far-off prospect that was subjected to dismissal and skepticism. Furthermore, it provides many advantages for speedy, efficient, effective, and arguably fair hearings. AI in arbitration, in its current stages is not without implications, however. This is so because arbitration by AI can pose challenges relating to risk of bias, lack of empathy, unemotional and unreasoned awards.

This essay is divided into several parts. Part II endeavors to espouse AI and arbitration by defining them and explaining their potential interaction with one another. Furthermore, Part III focuses on various scenarios in which AI may be potentially involved in the process of arbitration; each scenario illustrating a greater degree of involvement of AI within the arbitral process. Subsequently, Part IV addresses the implications that are likely to arise with this increased use of AI, owing to the unique characteristics of the process of arbitration as an alternative to traditional dispute resolution, i.e., the court structure of every state. These implications are not without solutions, however,

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[1] Pierre Lalive, *Irresponsibility in International Commercial Arbitration*, 7 ASIA PAC. L. REV.161, 161 (1999) (Lalive in his article quotes the great French writer and moralist, La Bruyère).

[2] *Id.*

[3] *See generally id.* (The author refers to some of these sources throughout the essay.).

[4] Maxi Scherer, *Artificial Intelligence and Legal Decision-Making: The Wide Open?*, 36 J. INT'L ARB. 539, 540 (2019).

and the paper will attempt to reconcile them. In Part V, the author will suggest reforms that can be instated in order to make the transition of AI into arbitration as smooth as possible. Finally, the author will argue that the use of AI in arbitral proceedings should be introduced gradually to allow both lawyers and parties opting for arbitration to become attuned to this new development. And that there needs to be greater initiative by the states to regulate the data entered into the algorithms in order to ensure a fair and just arbitral process. Since the prevalent use of AI is seen in cases of International Commercial Arbitration, the essay will focus on this discipline only.

II. THE INTERACTION BETWEEN ARBITRATION AND AI

The term 'Artificial Intelligence' was coined by John McCarthy, in 1956, who defined it as "the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence." He added however, that AI does not have to confine itself to methods that are "biologically observable." [5] In furtherance, Kathleen Paisley and Edna Sussman's definition serves as a useful guideline in illustrating how AI operates. They define it as a process where a large amount of data is combined with processing systems, allowing the software to "learn automatically from patterns or features in the data."[6] However, Paisley and Sussman concede that the term AI is often used loosely and encompasses many subjects including machine learning, and also natural language processing.[7] Ultimately, they conclude that AI is the software's ability to learn automatically from patterns or features in the data, thereby making it "intelligent."[8] The ability to develop its own 'thinking patterns' is a starting point in understanding the significance of AI, and why it would be pivotal to the development of more effective arbitrations.

The distinction between different types of AI models is illustrated by Jacob Turner, who fine tunes the difference between automated and autonomous systems. "Autonomous systems are those which can take decisions themselves without being explicitly programmed, whereas

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[5] Interview with John McCarthy, Compt. Scientist, Stan. Univ., http://jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html (Nov. 12, 2007).

[6] Kathleen Paisley & Edna Sussman, *Artificial Intelligence Challenges and Opportunities for International Arbitration*, 11 N.Y. DISP. RESOL. LAW. 35, 35 (2018), https://sussmanadr.com/wp-content/uploads/2018/12/artificial-intelligence-in-arbitration-NYSBA-spring-2018-Sussman.pdf.

[7] *Id.*

[8] *Id.*

automated systems must follow a pre-determined set of instructions with no discretion as to how they are to be followed."[9] Therefore, the difference between automated and autonomous systems is the degree of human intervention in the process. To illustrate, with the age-old adage, an automated car would not possess the same level of intelligence or independence as an autonomous car, which would not only be driverless, but would also have the ability to self-navigate and decide its destination and route.[10] The fact that the autonomous system has the ability to make decisions proves crucial when it comes to establishing legal and ethical rules for regulation of the same. Furthermore, the distinction between autonomous and automated systems is also important because other forms of technology are deterministic, i.e., they execute pre-programmed instructions from a human.[11] Autonomous systems will be discussed with relation to the great possible intervention of AI in arbitration, i.e., the distinct possibility of a machine, or 'robot' arbitrator in the future. Automated systems, on the other hand, will be discussed in relation to scenarios (1) and (2) which may be termed as the introduction or 'easing in' of AI in arbitral proceedings.

Nowadays, AI is a unique phenomenon that is being widely discussed, especially in the legal sector. An example of the dynamic and novel independent action that may be taken by AI is illustrated by the 2017 victory of AlphaGo—a machine learning system- against the masters of the game Go. The interesting aspect of the defeat was the manner in which the program defeated the Go champion. AlphaGo had devised[12] a new technique of playing the game, which no human in history had ever done. This was hailed as a revolutionary development within the realm of AI.[13] The game dates back to 4000 years or more, and is widely accepted as the most challenging strategy game that exists. [14] Children, especially in South Korea and China, are sent to

[9] Personal correspondence with Jacob Turner, Barrister, Fountain Ct. Chambers; July 18–19, 2019. (The same ideology is reflected in his book, titled 'Robot Rules: Regulating Artificial Intelligence,' more specifically in chapter 1.).

[10] David Levinson, *On the Differences Between Autonomous, Automated, Self-driving, and Driverless Cars*, TRANSPORTIST, (June 29, 2017), https://transportist.org/2017/06/29/on-the-differences-between-autonomous-automated-self-driving-and-driverless-cars/.

[11] *See* Turner, *supra* note 12.

[12] Jacob Turner, *Robot Rules—Jacob Turner*, LAW POD UK (Mar. 4, 2019, 10:00 a.m.), https://audioboom.com/posts/7191406-ep-71-robot-rules-jacob-turner.

[13] Jason Roell, *Why AlphaGo is a bigger game changer for AI than many realize*, MEDIUM (Sept. 30, 2017), https://medium.com/@roelljr/why-alpha-go-is-a-bigger-game-changer-for-artificial-intelligence-than-many-realize-64b00f54a0.

[14] *Go*, BRITANNICA, (Apr. 17, 2017), https://www.britannica.com/topic/go-game.

private schools specifically to learn how to play the game at an expert level.[15] The taxing and strenuous nature of this game is further illustrated by the fact that mastering it takes years of playing for several hours daily.[16] This ability of AI to take independent action is not merely limited to games but extends to every sector, principally the legal sector.[17]

Coming to arbitration, according to Nigel Blackaby and Constantine Partasides, it is essentially a "simple method" of resolving disputes.[18] In arbitration, each party submits their case to the decisionmaker or makers, whose judgment they are prepared to trust, known as the "arbitrator."[19] The arbitrator considers the facts, hears the arguments of the opposing parties, peruses and applies the applicable laws, and ultimately reaches to a conclusive decision, known as the "award."[20] The award is final and binding on the parties—and it is final and binding because the parties have agreed that it should be, rather than because of the coercive power of any state.[21] Arbitration, therefore, is an effective way of obtaining a final and binding decision on a dispute, or series of disputes, without reference to a court of law (although, due to the national laws and international treaties such as the Convention on the Recognition and Enforcement of Foreign Arbitral Awards,[22] arbitral awards are enforceable by a court of law if the losing party fails to implement them voluntarily).[23]

Previously, AI was considered outside the purview of dispute resolution, more notably in arbitration. This may be attributed to the reluctance of the arbitral community to introduce new procedures for the fear that it could lead to challenges in public courts at the enforcement stage.[24] This is further elaborated upon by Lucas Bento, who argues that the reason for this hesitance is the utilization of judgment in advocacy, which machines (previously)

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[15] Agence France-Pesse, *An Entire School Dedicated to Game of Go,* YOUNG POST (Mar. 25, 2016), https://www.scmp.com/yp/discover/lifestyle/features/article/3058853/entire-school-dedicated-game-go.

[16] *Id.*

[17] *See* Turner, *supra* note 12.

[18] NIGEL BLACKABY ET AL., REDFERN AND HUNTER ON INTERNATIONAL ARBITRATION 2 (Oxford Univ. Press, 6th ed. 2015).

[19] *Id.*

[20] *Id.*

[21] *Id.*

[22] Convention on the Recognition and Enforcement of Foreign Arbitral Awards art. III, V, June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 3 [hereinafter New York Convention].

[23] *See* BLACKABY, *supra* note 18.

[24] Philippe Billiet & Filip Nordlund, *A New Beginning—Artificial Intelligence and Arbitration*, KOREAN ARB. REV. 26, 26 (2018).

lacked.[25] It is submitted that these reservations seem outdated in today's time with the advent of the New York Convention and its pro-enforcement bias. The pro-enforcement bias now imposes a duty on state courts to give maximum effect to the award, subject to the reservations encapsulated under Article V of the New York Convention. Furthermore, the plight of Covid-19 has left the world scrambling to adapt to new routines and new work regimes.[26] AI in arbitration proves to be a worthy addition, especially in light of the fact that more and more of the arbitral process is becoming virtualized and digital; the next logical step would most certainly be the incorporation of AI based technology into the process.[27] Therefore, the words of David Gauke seem to have aged very well since his 2019 speech at the AI Summit in London: "Technological revolution is no longer on the horizon—it is here."[28] This technological revolution has increased technology usage in almost every profession, and the legal sector has proven to be no exception. The use of AI in arbitral proceedings would resultantly present "synergistic opportunities."[29]

III. THE PRACTICALITIES

A. *Scenario I: Present Day*

The use of technology in the arbitral community has proven to be slow but incremental, more so evidenced by Nappert and Cohen's observation that technology is still being used in a relatively simplistic manner, which is neither novel nor does it break new ground.[30] They list examples of the ways in which

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[25] Lucas Bento, *International Arbitration and AI: Time to Tango?*, KLUWER ARB. BLOG (Feb 23, 2018), http://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/.

[26] Emma Jacobs, *The Future of Work*, THE FINANCIAL TIMES (Dec. 1, 2021), https://www.ft.com/content/7202c5d4-fbc9-4ad7-93c2-cb05e6b582e9 (Interestingly, the author of this article also stated that employers are investing more in Artificial Intelligence and automation, and employees may see in the future that they are relieved from grunt work, or, in the bleaker scenario, relived entirely due to the process of automation.).

[27] Horacio Grigera Naón & Björn Arp, *Virtual Arbitration in Viral Times: The Impact of Covid-19 on the Practice of International Commercial Arbitration*, AM. U. WASHINGTON COLL. OF L. INT'L NEWS, https://www.wcl.american.edu/impact/initiatives-programs/international/news/virtual-arbitration-in-viral-times-the-impact-of-covid-19-on-the-practice-of-international-commercial-arbitration/ (last visited Apr. 7, 2022).

[28] David Gauke, Lord Chancellor and Sec'y of State for Just., House of Commons, Statement at The Artificial Intelligence in Legal Services Summit (June 4, 2019).

[29] *See* Bento, *supra* note 25.

[30] Paul Cohen & Sophie Nappert, *The March of the Robots*, GLOB. ARB. REV., (Feb. 15, 2017), https://globalarbitrationreview.com/the-march-of-the-robots.

technology is being used in arbitral proceedings. For example, communications between the parties are electronic, and arguments in hearings are transcribed.

Admittedly, these concepts do not seem to be either revolutionary or radical.[31] Currently, therefore, it is submitted that AI, in arbitration at least, is in primitive stages. It is limited to and dependent upon, the quality of the data processed, and the algorithm applied.[32] A potential illustration of the same is that data would be fed into the machine system, which would then generate useful information for the parties wishing to resort to arbitration. The "useful information" may be, for example, the provision of a database.

For example, Dispute Resolution Data is a U.S. start-up that provides a global database pertaining to international commercial arbitration and mediation.[33] The information covers industry type, claim amount, location, cost, duration, and outcomes i.e., whether the case is settled, withdrawn, or a final award is issued, etc.[34] The data is collated from a number of renowned arbitral institutions such as the International Chamber of Commerce ("ICC"), the International Centre for Dispute Resolution ("ICDR") and the Centre for Effective Dispute Resolution ("CEDR").[35] Another example is Arbitrator Intelligence, a non-profit initiative that aims to increase access to information about arbitrators and their decision making through post-award questionnaires sent to participants.[36] This initiative also maintains the confidentiality aspect of arbitration fully protected and allows there to be a reliable body of data without the need for the decisions to be published. These examples illustrate the fact that the current situation in arbitration is, for now, merely limited to the provision of information by using AI.

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[31] *Id.*

[32] Burkard Schafer, Professor of Computational Legal Theory, Univ. of Edinburgh, Keynote Panel I at The Artificial Intelligence in Legal Services Summit (June 4, 2019).

[33] DISPUTE RESOLUTION DATA, *About DRD,* (last visited July 17, 2019).

[34] *See generally Questions & Answers*, DISP. RESOL. DATA, https://www.disputeresolutiondata.com/questions_answers (last visited Apr. 7, 2022).

[35] James Rogers & Matthew Buckle, *The Future of Arbitration in the World of Big Data*, 9 INT'L ARB. REP. 1, 12 (Oct. 2017), https://www.nortonrosefulbright.com/en/knowledge/publications/c93235b5/the-future-of-arbitration-in-the-world-of-big-data.

[36] Ben Roe & Baker McKenzie, *The Year Ahead—Innovation: A New Generation of Legal Analysis Tools is Emerging*, LEXOLOGY, (Jan. 21, 2019), https://www.lexology.com/library/detail.aspx?g=fa0aa71b-8a55-4701-b4c695ab94aee4e2.

B. *Scenario II: Increased usage*

In the AI in Legal Services Summit,[37] Sir William Blair narrated an interesting anecdote where one is greeted by a robot in the China International Court in Shenzhen- the Chinese equivalent of Silicon Valley. The sole function of the robot is to direct visitors how to reach their desired floor.[38] If one imagines a more refined situation than the one above, in this scenario, the arbitral world, having fully accepted that AI may be used as a tool for the provision of information, the usage must increase a step further. The automated system, in this scenario would act as an "instructor". Once again, the instructions are delivered through the datasets and the algorithms that are created for the system, and the system delivers instruction as output. The use of automated systems in arbitration in Scenario II would be the same as in Scenario I; instructional, rather than a method of decision making.[39]

An example of the same would-be introduction of AI systems which uses Natural Language Processing ("NLP"), as this would significantly reduce the tasks of a lawyer engaging in arbitration. NLP involves the usage of a special type of software that has the ability to read "natural language," i.e. the ordinary human language. The attribute of NLP lies in its ability to contextualize the language, and resultantly provide accurate results for analysis of legal texts. The utility of NLP is increasingly necessary in arbitration, where lawyers are paid by the hour and clients are reluctant to pay for mundane administrative work. Consequently, there has been a surge in law firms scrambling to make their practices as efficient as possible.[40] NLP could be used to read a contract and identify the existence of an arbitration clause, deciphering the *lex arbitri* and the *lex loci arbitri*, the last two being the bone of contention in many cases where both parties fail to specify the same.

Furthermore, the task of translating documents takes up an enormous amount of time in international commercial arbitration, as it is notorious for its huge number of documents and bundles. Often, parties will speak differing languages, or the arbitral agreement itself is in a different language, or the place where the enforcement of the award is sought may again require a

[37] The Artificial Intelligence in Legal Services Summit, (June 4, 2019).

[38] Sir William Blair, Professor of Financial L. and Ethics at the Centre for Com. L. Stud. at Queen Mary Univ. London and Assoc. Member at 3 Verulam Bldg's., Keynote Panel I at The Artificial Intelligence in Legal Services Summit (June 4, 2019).

[39] *Id.*

[40] Reena SenGupta, *Law Firms Start to Take the Long View,* FINANCIAL TIMES, (Oct. 14, 2021), https://www.ft.com/content/a602a51e-3f2e-48f4-90db-25d36928c69c.

translation of the documents into the official language of that state.[41] Allowing an automated system to translate hundreds and thousands of documents would lead to greater efficacy and an overall reduction in the time of the average arbitral proceeding.

Admittedly, NLP has yet to reach the stage where the translation of documents can be done at the precise accuracy that is required of legal texts, especially in arbitration where the arbitration clause—if not drafted properly—can be open to many interpretations.[42] NLP service providers warn users with a caveat that their services may not be perfect for word-to-word precision of the translation and that some words may be lost in translation. This holds true for most languages as contextual analysis is necessary, and a literal translation does not always provide the desired outcome. For example, in recent international arbitration proceedings in which the author was involved, the Parties to the arbitration stipulated that the arbitrator be well-versed with the Urdu language. This was due to the fact that many of the contractual documents, written submissions, and evidence were in Urdu. The Urdu language is heavily influenced by the Hindi, Arabic, and Persian languages; many words are derivations of these languages. An unsophisticated NLP processor would resultantly have difficulty in ascertaining the legal context of the words. Therefore, for translation of legal documents, especially those in multiple languages, NLP needs a higher level of sophistication. It is uncertain when this level of sophistication would be attainable, however one can expect that it will become better and more influential for businesses in times to come.[43]

Moreover, AI at this stage could also be used to draft boilerplate terms of the award. Generally, arbitrators are put to task to extract information for the award such as the information regarding parties, procedural history, facts, and details about the arbitration clause which takes a considerable amount of time. The length of time taken to render an award would be arguably shortened

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[41] New York Convention, *supra* note 22, at art. IV(2) ("If the said award or agreement is not made in an official language of the country in which the award is relied upon, the party applying for recognition and enforcement of the award shall produce a translation of these documents into such language. The translation shall be certified by an official or sworn translator or by a diplomatic or consular agent.").

[42] Ellen Falci, *Debunking NLP: Translation*, CLARABRIDGE, (Aug. 17, 2017), https://www.clarabridge.com/blog/debunking-nlp-translation.

[43] Bernard Marr, *5 Amazing Examples of Natural Language Processing (NLP) In Practice*, FORBES, (June 3, 2019), https://www.forbes.com/sites/bernardmarr/2019/06/03/5-amazing-examples-of-natural-language-processing-nlpin-practice/?sh=526e06541b30.

if AI software was able to extract the relevant content from the voluminous documents effectively with the help of an algorithm.

C. *Scenario III: The Robot Arbitrator*

Perusal of journal articles and blogs even two to three years old illustrate the dismissive approach taken with regard to the possibility of introduction of non-human or mechanic arbitrators. For example, Ibrahim Shehata writes that the possibility of having robotic arbitrators is a discussion of the "unknown unknown" and the arbitration community would be better off focusing its efforts upon the "known knowns".[44] One cannot help but disagree. Indeed, Cohen and Nappert, even then ahead of the curve, urged us to comprehend that "this is not the idle speculation of science fiction".[45]

The impetus demands discussion of relevant social, legal, and philosophical implications on possible scenarios that involve the use of AI in arbitration, as perhaps we are not at all far away from such a possibility. After all, Kira Systems was established in 2011,[46] but it is only in the past three years that the recent boom has resulted in many of the London firms using this software.[47] Furthermore, in Canada, a robot mediator was used for the first time in the history of mediation. The online tool used algorithms in place of a human mediator and settled a three-month long dispute in less than an hour.[48] This indicates the notion that autonomous AI systems will occupy a significant place in arbitration in the not-too-distant future. This is given more weightage by the fact that "[t]here is already talk of replacing tribunal secretaries with AI to assist with legal research and summarizing legal submissions or evidence."[49]

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[44] Ibrahim Nour Shehata, *The Marriage of AI & Blockchain in International Arbitration: A Peak into the Near Future*, KLUWER ARB. BLOG, (Nov. 12, 2018), http://arbitrationblog.kluwerarbitration.com/2018/11/12/themarriage-of-artificial-intelligence-blockchain-in-international-arbitration-a-peak-into-the-near-future/.

[45] *See* Cohen & Nappert, *supra* note 30.

[46] KIRA SYSTEMS, https://www.crunchbase.com/organization/kira (last visited June 19, 2019) (Kira Systems is a machine learning software that identifies, extracts, and analyses text in contracts and other documents. It provides contract review and analysis software. The company was founded by Alexander Hudek and Noah Waisberg in 2010. It is used by major law firms in London such as Allen and Ovary, Freshfields and DLA Piper and Latham and Watkins.).

[47] Allen & Overy, Linklaters, DLA Piper, and Freshfields are amongst these firms.

[48] Nick Hilborne, *Robot Mediator Settles First Ever Court Case,* LEGAL FUTURES, (Feb. 19, 2019) https://www.legalfutures.co.uk/latest--news/robot-mediator-settles-first-ever-court-case.

[49] James Kwan et al., *The Use of Artificial Intelligence in International Arbitration: Where Are We Right Now?*, 22 INT'L ARB. L. REV. 19, 22 (2019).

A machine arbitrator would eventually operate as an autonomous system as described by Jacob Turner as discussed above. He theorized that the AI system would be able to make decisions autonomously, through its own cognitive and analytical processes without external programming. [50] The arbitral proceedings would therefore be conducted by a non-human arbitrator.

Such technological advancement would pose many questions and issues pertaining to legal theory. According to Daniel B. Rodriguez, we need to encourage legal philosophers to think about this new technology and the legal philosophy underpinning this technology thereby making these discussions fundamental to future jurisprudential precedent.[51]

IV. IMPLICATIONS

In general, the legal community is skeptical about the lack of human element in decision making which poses moral as well as ethical dilemmas. Moreover, one of the preliminary issues likely to arise is how comfortable parties would be with an automated system determining their liberty. It may be assumed that parties trust a human arbitrator because the arbitrator possesses emotional intelligence- i.e., the ability to sympathize, empathize, and rationalize. It is difficult to prophesize the conclusion reached by a machine arbitrator in case of a moral dilemma because, for the time being, empathy cannot be translated into an algorithmic code. In 2018, renowned international arbitrator Sophie Nappert, in her humorously titled speech "Disruption is the New Black,"[52] opined that despite the possibility of a machine arbitrator being able to eliminate the risk of human error and unpredictability, the ability to select the decision makers in one's own dispute is what makes arbitration appealing at a basic and emotional level[53]. However, Nappert warned the audience that scientists and suppliers of algorithms "are currently warning litigation and arbitration users that human decision-making as we exercise it on a daily basis is no better than a lottery. In addition to being

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[50] *See* Turner, *supra* note 12.

[51] Daniel B. Rodriguez, Professor of Law and Former Dean, Northwestern Pritzker School of Law, Keynote Panel III at The Artificial Intelligence in Legal Services Summit (June 4, 2019).

[52] Sophie Nappert, Arbitrator, speech at The Proskauer Lecture: Disruption is the New Black (August 2018), *in* INT'L CHAMBER COM. DISP. RESOL. BULL., July 2018, at 20.

[53] Sara Higgins, *Identifying the Blind Spots: Self Reflection in the Field of International Commercial Arbitration*, CPR SPEAKS, (June 28, 2018), https://blog.cpradr.org/2018/06/28/identifying-the-blind-spots-self-reflection-in-the-field-of-international-arbitration/.

costly, time-consuming, and resource-depleting, it is unpredictable and inevitably subject to bias."[54] After all, one is aware of the famous saying that "*justice is what the judge ate for breakfast*," which is implicit of the fact that decision making is influenced by the inherent biases, beliefs, and morals of the adjudicator.

Furthermore, since arbitration is heavily dependent on party autonomy, parties would need convincing that the option to choose a machine arbitrator would result in creating more just and fair decisions, and awards that are less likely to be challenged. And while the individualistic nature of commercial arbitration proves difficult to conceive why parties would be on board if it does not directly affect their case, there would be a need to implement initiatives by arbitral institutions to encourage the same. This could be done by carrying out 'test arbitrations' or asking for volunteer parties to be the pioneers of change. Additionally, compilation of compelling research and data in favor of the AI system would need to be shown to parties in order to incentivize the use of AI in their arbitral proceedings. The incremental growth could therefore prove beneficial to the sphere of international commercial arbitration in the longer run.

However, the problem that arises subsequently with test arbitrations is the fact that the confidentiality of the arbitral process, more specifically the arbitral award, is one of the hallmarks of arbitration; and arguably why parties prefer arbitration over litigation. Additionally, international commercial arbitration awards are generally not published owing to the obligation of confidentiality upon arbitral institutions. Therefore, a foreseeable issue with test arbitrations is that parties would be reluctant to provide access to their awards. This poses a significant hindrance to the efficacy of the AI model as AI programs require access to data.[55] This holds true especially for machine learning models, which are based on probabilistic inferences and are dependent on data for their operation. The higher the volume of sample data, the more accurate the model's predictive value.[56] However, Scherer urges not to despair as there are existing initiatives that publish commercial awards on a regular basis, typically in a redacted format.[57] Furthermore, she states that in

[54] *Id*.

[55] Scherer, *supra* note 4, at 554.

[56] Scherer, *supra* note 4, at 555.

[57] Scherer, *supra* note 4, at 555; *see generally Note to Parties and Arbitral Tribunals on the Conduct of the Arbitration Under the ICC Rules of Arbitration*, INT'L CHAMBER OF COM., ¶ 42–43, (Jan. 1, 2021), https://iccwbo.org/content/uploads/sites/3/2020/12/icc-note-to-parties-and-arbitral-tribunals-on-the-conduct-of-arbitration-english-2021.pdf.

any event, even without publishing confidential awards, institutions could collect them and make them available for the purpose of building AI models.[58]

Secondly, it is important to note that the vast majority of national laws are silent on the appointment of a machine arbitrator. A notable exception is French law, where only a "natural person having full capacity to exercise their rights may act as an arbitrator."[59] This would raise obvious implications with the introduction of AI systems into arbitration. One would counter this with the argument that France is famous (and often notorious) for being one of the most arbitration-friendly jurisdictions in the world. [60] It seems incomprehensible that this piece of legislation would not be interpreted in an arbitration-friendly manner by the courts or may even carry the possibility of revocation, keeping in line with its pro-arbitration image. Under English law however, as per the English Arbitration Act ("Arbitration Act"), the objective of arbitration is to obtain a "fair resolution of disputes by an impartial tribunal without unnecessary delay or expense".[61] The parties are free to agree on how their disputes are resolved, subject only to such safeguards as are necessary for the public interest.[62] While there is no explicit permission nor prohibition of machine arbitrators, a foreseeable problem may be the issue of 'public interest' under English law.[63] Although often construed narrowly, this may be an instance where the public interest exception to the review of an arbitral award by a machine arbitrator may be relevant. This is especially so what with the current situation being that there is a lack of explicit standards that algorithms abide by; algorithms are often designed in such a manner that, while the outcome is provided, the reasoning behind the same is not.[64] This becomes even more problematic in light of the fact that there is no review of the merits of the arbitral award, save for the Section 69 exceptions under English law.[65] Ultimately, this becomes an issue of democratic importance as it is difficult to imagine a scenario under which both parties would consent to

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[58] Scherer, *supra* note 4, at 555.

[59] Décret 2011-48 du 13 janvier 2011 portant réforme de l'arbitrage [Decree 2011-48 of January 13, 2011 on reforming the law governing arbitration], JOURNAL OFFICIEL DE LA RÉPUBLIQUE FRANÇAISE [J.O.] [OFFICIAL GAZETTE OF FRANCE], Jan. 14, 2011, p. 777.

[60] Gilles Cuniberti, *Beyond Contract—The Case for Default Arbitration International Commercial Disputes*, 32 FORDHAM INT'L L.J. 417, 418 (2008).

[61] English Arbitration Act 1996, c. 23, § 1(a).

[62] *Id.* § 1(b).

[63] New York Convention, *supra* note 22, at art. V(2)(b) ("Recognition and enforcement of an arbitral award may also be refused if the competent authority in the country where recognition and enforcement is sought finds that: . . . (b) The recognition or enforcement of the award would be contrary to the public policy of that country.").

[64] Scherer, *supra* note 4, at 562.

[65] English Arbitration Act 1996, *supra* note 61, at § 69.

the machine arbitrator delivering its award and not knowing how the arbitrator reached its conclusion. Moreover generally, the lack of reasoning in an award makes the award susceptible to challenge in many countries.

Additionally, arbitral institutions are also mainly silent on the use of technology in international arbitration. An exception to the same is the Hong Kong International Arbitration Centre ("HKIAC")'s Administered Arbitration Rules (in force 1 November 2018). They are the first set of rules in Asia to mandate the use of technology by the arbitral tribunal in adopting "suitable procedures."[66] Technology is also mentioned in the ICDR Rules of 2014.[67] However, given the contractual freedom in arbitration to choose the procedure to be followed, it is safe to presume that institutional frameworks will not operate as a bar. Article 19 of the United Nations Commission on International Trade Law ("UNCITRAL") Model Law on International Commercial Arbitration explicitly provides that the parties are free to agree on the procedure to be followed.[68]

Thirdly, a redressal must be made of what the author refers to as the two C's: "Complacency" and "Lack of Confidence". Professor Burkhard Schafer, in his discussion at the AI Summit, mused whether there is a possibility of lawyers losing the intuition and knowledge that they attain from reviewing bundles and bundles of documents and whether the ability to "fine tooth comb" a large volume of documents may be lost.[69] This may pose a threat to the training of lawyers in international commercial arbitration, where trainees are acquainted with the process by initially reviewing, tying, and bundling volumes of documents. This may be countered by the fact that introduction of AI systems would result in trainee lawyers being acquainted with the actual dispute resolution proceedings *ab initio*, giving them greater opportunity and responsibility, and leaving painstaking administrative tasks to

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[66] H.K. Int'l Arb. Ctr., Administered Arbitration Rules 2018, art. 13.1 (effective Nov. 1, 2018), https://www.hkiac.org/sites/default/files/ck_filebrowser/PDF/arbitration/2018%20Rules%20book/2018%20AA%20Rules_English.pdf ("The arbitral tribunal shall adopt suitable procedures for the conduct of the arbitration in order to avoid unnecessary delay or expense, having regard to the complexity of the issues, and the amount in dispute and the effective use of technology.").

[67] Int'l Ctr. for Disp. Resol. [ICDR], *International Dispute Resolution Procedures*, art. 20(2) (June 1, 2014), https://www.icdr.org/sites/default/files/document_repository/ICDR_Rules.pdf?utm_source=icdr-website&utm_medium=rules-page&utm_campaign=rules-intl.

[68] U.N. COMM'M ON INT'L TRADE L., UNCITRAL MODEL LAW ON INTERNATIONAL COMMERCIAL ARBITRATION 1985: WITH AMENDMENTS AS ADOPTED IN 2006, art. 19, U.N. Doc. A/40/17, U.N. Sales No. E.08.V.4 (2008).

[69] Schafer, *supra* note 32.

the AI systems. The ultimate prospect of greater efficiency would arguably outweigh all other considerations.

The other foreseeable problem is the prospect of lawyers lacking the confidence to challenge the decision of the machine arbitrator owing to blind trust in the algorithm. As there is the risk of the AI system giving an erroneous decision, this must ultimately be kept in check. The resolution lies in the retention of human control over the arbitral proceedings, at least initially. While the machine arbitrator may be used in arbitral proceedings, the ultimate decision ought to lie in the hands of the human arbitrators. An odd number of arbitrators, with the ratio of two humans to one machine, allows the AI system to be afforded the opportunity of giving a novel outcome. The human arbitrators may then *choose* to adopt the decision of the machine arbitrator, either in whole or in part, if they believe that the outcome reached by the autonomous system is better suited to the dispute than their own.

Fourthly, there is a tendency for arbitral institutions to grant full or absolute immunity to arbitrators. An example is the ICC Rules,[70] where Article 41 of the Rules gives immunity to not only the arbitrators, but also extends this immunity to other employees of the ICC, to the extent such limitation of liability is prohibited by applicable law.[71] This problem also arises in a country like England, where the Arbitration Act allows for complete immunity of the arbitrator unless the act or omission is shown to have been in bad faith. This is problematic because if a human arbitrator repeatedly delivers erroneous judgments, it would render the arbitrator liable for removal from that case and not made a choice for further adjudication. On the other hand, accountability of a machine arbitrator presents a unique dilemma of to whom is responsibility attributed to? Does culpability lie with the creator of the algorithm, the person who entered, or "fed" the data in the algorithm, or the intrinsic self-learning processes of the machine itself? Furthermore, given the total immunity of the arbitrator, what is the consequence of an erroneous judgment? Charlie Morgan, proposes that in such a scenario, states must ensure that there is a system of reverting back to national courts.[72] A logical question that arises as a result is whether this would mean de-characterizing the very nature of international commercial arbitration, which limits access to courts (hence a form of 'alternative' dispute resolution)? Perhaps not. About domestic court involvement in the arbitral process, Julian Lew says: "National court

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[70] Int'l Chamber of Com. [ICC], *Rules of Arbitration of the International Chamber of Commerce* (Jan. 1, 2021).

[71] *Id.* at art. 41.

[72] Conversation with Charlie Morgan, Senior Assoc. Disp. Resol. at Herbert Smith Freehills, Speaker at Keynote Panel I at The Artificial Intelligence in Legal Services Summit (June 4, 2019).

involvement in international arbitration is a fact of life as prevalent as the weather."[73] In the four characteristics he lists of international commercial arbitration, he explicitly states that arbitration does not operate from the relinquishment of jurisdictional control by states.[74] Lew, however, concedes that the access to the "autonomous domain" of international arbitration is obtained through contract between parties that lead to relinquishment of rights by national courts.[75] This may be countered by the notion that this "relinquishment" of rights by the national courts is limited to certain situations where the role of courts is curtailed, such as competence-competence i.e., the ability of the arbitral tribunal to ascertain its own jurisdiction, the merits of the arbitral award, and the arbitral proceedings themselves. It may also be noted that the principle of competence-competence itself is applied differently in different states, and most national courts prefer to retain some sort of supervisory jurisdiction over the arbitral process.[76]

Finally, it is both an attribute and a shortcoming of AI that the data that is being fed into the system is dependent on the type and quality of the data. The driver of change (or lack thereof), therefore is the data that is being produced. According to Duncan C. Card, the algorithm can be developed according to prevalent standards thus, it can be customized and "attacked", making the arbitral system more transparent, neutral, and just.[77] However, it is virtually impossible to cater to a situation where the system is completely neutral as the algorithm. This is because AI currently hinges on the data fed into the system; the manufacturer of the data being will ultimately incorporate some of their own biases into the system, regardless of how hard they try to maintain neutrality. Thus, AI, at least in its early stages has the ability to create the perfect storm. This holds especially true in the case of arbitration and arbitral bias. If the data fed into the system is one in which racial, cultural, and religious biases are predominant, the result is less likely to produce a just and fair conclusion. One of the most controversial examples of algorithmic bias was the system developed by the Durham Constabulary in the United Kingdom. The Durham Constabulary and computer science academics

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[73] Julian D. M. Lew, *Does National Court Involvement Undermine the International Arbitration Processes*, 24 AM. U. INT'L L. REV. 489, 490 (2009).

[74] *Id.*

[75] *Id.*

[76] Dallah Real Estate and Tourism v. The Ministry of Religious Aff., Gov't of Pak [2010] 46 UKSC 13 (appeal taken from Eng. and Wales).

[77] Duncan C. Card, Senior Partner, Co-Chair Tech. L. Prac., Bennett Jones LLP, Artificial Intelligence in Legal Services Summit (June 4, 2019).

developed the Harm Risk Assessment Tool ("HART system").[78] This AI system was designed to predict whether suspects were at a low, moderate or high risk of committing crimes in the foreseeable future, and used 104,000 histories of people previously arrested and processed in Durham custody.[79] In 2017, the HART system incorporated new data, the purpose of which was to reduce reliance on postcode predictors as an indicator of whether or not a previous suspect was likely to commit a crime based on their neighborhood.[80] A dataset called "Mosaic," developed by a company called Experian, was used. Mosaic was based on profiles of all 50 million adult residents in the UK, assembled using data gathered from public sources, including the internet. Mosaic used offensive stereotypes to brand people and defined categories, for instance, by reference to age group or ethnicity (e.g., "disconnected youth", "dependent greys", "large extended families in neighborhoods with a strong South Asian tradition", or "Asian heritage"). The HART System was eventually withdrawn in 2020. [81] Due to outcry by the public and the NGO "Big Brother Watch", Durham Police stated that it worked with Experian to improve its understanding of local communities, and in 2018, it stopped using Mosaic.[82] This seemingly dystopian algorithm serves to illustrate the bias that may come with a robot arbitrator- in terms of nationality, race, caste, etc. "Intellectual corruption" as Karen Mills terms it, is already a prevalent issue in arbitration where the arbitrator's opinions is tainted with prejudice or racial bias. This is especially so in cases where western arbitrators sit to adjudicate disputes between western and "Third World" parties. Mills argues that intellectual corruption may range from simple cultural misunderstanding through cultural bias to actual racism.[83] A western arbitrator may pay greater

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[78] Matt Burgess, *UK Police are Using AI to Inform Custodial Decisions—But It Could be Discriminating Against the Poor,* THE WIRED (Jan. 3, 2018, 7:00 AM), https://www.wired.co.uk/article/police-ai-uk-durham-hart-checkpoint-algorithm-edit#:~:text=For%20the%20last%20five%20years,in%20a%20two%20years%20period.

[79] *Helping Police Make Custody Decisions Using Artificial Intelligence*, UNIV. OF CAMBRIDGE (Feb. 26, 2018), https://www.cam.ac.uk/research/features/helping-police-make-custody-decisions-using-artificial-intelligence.

[80] *Id.*

[81] Barry Collins, *AI Handing Out Rough Justice in the U.K*, FORBES (Mar. 29, 2022, 7:15 PM), https://www.forbes.com/sites/barrycollins/2022/03/29/ai-handing-out-rough-justice-in-the-uk/?sh=58087ba36522.

[82] Council of Eur. Comm. on Legal Aff. and Hum. Rights*, Justice by Algorithm—The Role of Artificial Intelligence in Policing and Criminal Justice Systems* (2020).

[83] Karen Gordon Mills, Speaker at The International Arbitration Conference: Corruption and Other Illegality in the Formation and Performance of Contracts and in the Conduct of Arbitration Relating Thereto (May 12–15, 2002), *in* 11 INT'L COUNCIL COM. ARB. CONGRESS SERIES, 2003, at 288.

credence to a western witness than to an Asian one. She urges against falling into this ethnocentric trap.[84]

The question then to be posed is how realistic it would be to expect global standards for algorithms?[85] Hurly, argues that the difference in cultures all around the world means that there is no way of unifying standards that would be one size fits all.[86] The attractiveness of arbitration stems from its flexibility—i.e., parties can choose to apply law, no law, or a combination of both, or internationally recognized principles such as *lex mercatoria*, *ex aquo et bono*, or religious law etc. One would argue that the method chosen by the parties to resolve their dispute is ultimately reflective of the legal culture of the parties' home states.

V. RECOMMENDATIONS AND LOOKING AHEAD

Firstly, states ought to invest their resources into discerning how algorithms work in practice and how they come up with conclusions. The focus needs to shift from the implications of AI to the actual technology itself. AI-acquainted lawyers as well as legal academics are virtually unheard of and are often treated paradoxically. Indeed, one author has fated them to be as "rare as vegan butchers".[87] The introduction of AI, therefore, would require an overhaul of the current legal regime, where lawyers are familiar with the mechanics of AI. While arguably this is an expensive task, the initiative by the United Kingdom's Ministry of Justice to provide £2 million to support lawtech is proof of the fact that states are now willing to delve deeper into the exploration of this area.[88] Whether or not these funds will be used for arbitration is a different matter as it does not neatly fit within the conservative and traditional legal model. However, with England being one of the friendliest arbitration states in the world, even if the £2 million is not to be utilised on the discovery of AI in arbitration, it is only a matter of time that resources will be allocated towards this task.

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[84] *Id.*

[85] Noel Hurley, Vice President of Strategy at Arm, Interactive Debate at The Artificial Intelligence in Legal Services Summit: The Ethics of Algorithms Debate (June 4, 2019) (quoted question was posed at the debate).

[86] *Id.*

[87] Marc Lauritsen, *Towards a Phenomenology of Machine-Assisted Legal Work*, 1 J. ROBOTICS, ARTIFICIAL INTEL. & L. 67, 79 (2018).

[88] Neil Rose, *Gauke Announces more Financial Backing for Lawtech*, LEGAL FUTURES (June 4, 2019), https://www.legalfutures.co.uk/latest-news/gauke-announces-more-financial-backing-for-lawtech.

Furthermore, regulation of AI in arbitration is essential, and can be done at two levels. In Scenario II, for example, there would be a need for regulation of the algorithm itself. It would have to be certified, accredited, and the credibility of the algorithm would ultimately be dependent upon the reputation of the algorithm in the market. It is suggested that just as the parties to the arbitration are allowed to agree upon the choice of law to govern their dispute, this inherent consent-based system of dispute resolution would allow for the parties to choose different types of algorithms to govern their dispute. The Law Society Technology and Law Policy Commission's recommendation of keeping a national register of algorithms that are logged into the book would be a welcome proposal, with a separate section for the algorithms to be used in arbitration.[89] Moreover, in the case of a machine arbitrator, the decision of the machine arbitrator is already susceptible to check and balance owing to the fact that there are two other arbitrators on the panel. It is their prerogative whether or not to accept the decision of the machine. Interestingly enough, Nappert and Cohen have suggested the converse; they suggest that AI could be used to correct the biases of a human arbitrator and one could compare the decision of the human arbitrator against the decision of the robot to cross check the impartiality and independence of the arbitrator.[90] This is indicative of the utility of the machine arbitration for different purposes i.e., to render an award, or to correct or cross check the outcome of the human arbitrator.

Lastly, the seminal text on international commercial arbitration is undeniably the New York Convention of 1958. At the time the Convention was drafted, the possibility of AI in arbitration would not have been even envisioned by the drafters. Indeed, even now, the full scope of AI into arbitration cannot be envisaged. However, the next decade will inevitably witness a change in the way arbitration once operated and the rise of AI demands for its regulation, especially in arbitration. It is suggested that arbitral institutions and states alike draft guidelines and rules for regulation of AI systems. UNCITRAL could serve as the forerunner of the same, with the introduction of a new protocol, or as a schedule within the existing Model Law. The draft ought to set out the definition of AI in arbitration, list accredited and certified algorithms, and address problems of accountability and consequences. A useful starting point may be the European Union's High-Level Group Expert Report published in 2019 on guidelines for "Trustworthy

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[89] *Algorithm use in the Criminal Justice System,* L. SOC'Y TECH.& L. POL'Y COM'N (June 4, 2019), https://www.lawsociety.org.uk/en/topics/research/algorithm-use-in-the-criminal-justice-system-report.

[90] Cohen and Nappert, *supra* note 30.

AI". [91] According to the Guidelines, "Trustworthy" AI should be: "1) Lawful— respecting all applicable laws and regulations; 2) Ethical— respecting ethical principles and values; and 3) Robust—both from a technical perspective while taking into account its social environment."[92] Guideline (1) is especially relevant for arbitration. It is of utmost importance to the enforceability of the arbitral award that it is rooted in the mandatory laws of the place where the award is rendered and the place where the enforcement of the award is sought. As a result, the arbitral community must therefore ensure that the AI systems being used do not conflict with mandatory laws. The upcoming years will be a testament to legislative restraints and different approaches by different states on the regulation of such. This may even result in a different sort of regulatory arbitrage, where more relaxed rules on AI may increase in popularity of parties choosing the state as their seat of arbitration.

VI. CONCLUSION

These are crucial times for the evolution of arbitration from a conservative sphere into one that is in line with today's legal world. Recently developments in the field have been slow; however, the advent of Covid-19, and with it, the new wave of technology in the legal sector will ensure that arbitration catches up. In the words of Sophie Nappert: "In the face of rapidly-paced and seismic disruption, we need to be proactive, lest we become the Kodak and Blockbusters of dispute resolution."[93]

The use of AI in arbitration would make the process smoother, speedier, and arguably more just. It is, however necessary that the use of AI be phased in gradually and incrementally. Therefore, the implications need to be dealt with in order for the process to be streamlined and regulated. It remains the duty of the states to ensure that they are prepared to face the upcoming challenges and come up with adequate responses to that effect.

Furthermore, as far as the outcomes of AI assisted arbitration is concerned, the determinants of its success would ultimately be the quality of data input and the accuracy of the algorithm itself. Therefore, attention is merited for the quality control of the data input and an examination of the construct of the algorithms.

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[91] EUROPEAN COMMISSION, ETHICS GUIDELINES FOR TRUSTWORTHY AI 2 (Nathalie Smmuha ed., 2019) <https://ec.europa.eu/digital-singlemarket/en/news/ethics-guidelines-trustworthy-ai>.

[92] *Id.*

[93] *See* Nappert, at 52.

Lastly, it must be cautioned that the introduction of these new technological processes does not aim to devalue or undermine the conventional nature of the arbitral process but rather, aims to supplement it by enhancing its capabilities with the appropriate use of technology. AI in arbitration is coming into itself as an essential assistive tool, which has tremendous potential for further development and application.

Appendix

The 'AI in Legal Services Summit was held in London on 4th June 2019. It covered a variety of debates ranging from the ethics of AI to the use of AI in Law to the impact on a lawyer's job with the introduction of AI. The speakers were from all over the world.

List of Speakers (in alphabetical order of last name)

- Sir William Blair, Professor of Financial Law and Ethics at the Centre for Commercial Law Studies, QMUL and Associate Member at 3VB, Keynote Panel I 'Algorithms in the justice System – current state of play and the future outlook'.
- Duncan C. Card, Senior Partner, Co-Chair Technology Law Practice, Bennett Jones LLP, Keynote Panel II 'Wider societal impacts of Al and its future'.
- The Rt Hon. David Gauke MP, Lord Chancellor and Secretary of State for Justice.
- Noel Hurley, VP Strategy, AR, Interactive debate 'The ethics of algorithms'.
- Dr Hannah Knox, Associate Professor of Anthropology, UCL, Keynote Panel II 'Wider societal impacts of AI and its future'.
- Charlie Morgan, Senior Associate Dispute Resolution at Herbert Smith Freehills, Keynote panel I 'Algorithms in the justice System – current state of play and the future outlook'.
- Daniel B. Rodriguez, Professor of Law, and Former Dean, Northwestern Pritzker School of Law, Keynote Panel III 'Future skills and job requirements for the professions with a focus on law, banking and accountancy'.
- Professor Burkhard Schafer, Professor of Computational Legal Theory, The University of Edinburgh, Keynote Panel I 'Algorithms in the justice System – current state of play and the future outlook'.