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Incorporation of Artificial Intelligence in Judicial Administration: Utility, Challenges and Solutions

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ABSTRACT

With the rising incorporation of technology in the legal sphere, whether it is research work, drafting, pleading, or even filing of cases, it is evident that software using Artificial Intelligence (hereinafter known as 'AI') will be widely used in future. Ten years down the line, we may enter an era where an AI Bot has replaced Judges in petty cases. Further, such technology may be deployed in public places or high-security areas that recognise a person's facial features to predict that they are about to commit a crime and, in turn, alert the authorities beforehand. AI may, on the one hand, come across as an efficient, impartial and cost-effective tool in the justice delivery system, but it may also pose several challenges for the lawmakers pertaining to culpability, ethics and threats of generative AI. Therefore, this paper aims to examine the utility & challenges arising from integrating AI-based technology in judicial administration. Apart from navigating the utility and risks of using such technology, the paper offers viable solutions for the said challenges. The methodology adopted for this paper is a mix of Doctrinal and Socio-Legal Research Approach.

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"Integrating AI in modern processes, including court proceedings, raises complex ethical, legal, and practical considerations that demand a thorough examination. The use of AI in court adjudication presents both opportunities and challenges that warrant nuanced deliberation"¹
–Justice DY Chandrachud, Chief Justice of India

SCOPE AND CHALLENGES OF INCORPORATION OF ARTIFICIAL INTELLIGENCE IN ADJUDICATION

For a generation whose attention span is merely 15 seconds, is data-driven Judicial decision-making by Artificial Intelligence (hereinafter known as 'AI') the way forward? We have entered an era of quick commerce, where time is of the essence, and results are certainly more important than the process. Automation is going to be the driving force in the next decade. With the introduction of self-driving cars, smart televisions, watches, fridges and even speakers, we have entered an exciting phase of human evolution where the lines between machines and humans are blurring. For instance, a man in Belgium committed suicide after being encouraged to do so by an AI-powered chatbot.² Given the fact that it is generative AI, the liability can not be fastened upon coders, who merely programmed the bot to generate answers based on the data fed to it nor can it be fastened upon the company, as it lacks the requisite mens rea.³

Renowned legal expert Mark Lemley expressed concerns about the accuracy of this technology. He warns against the lack of preparedness of the lawmakers against the risks posed by AI.⁴ It is essential to clarify that the term 'artificial intelligence' was first coined by John McCarthy in 1956, where he envisioned a program that would process and act upon information, such that the result is parallel to how an intelligent person would respond to a similar input.⁵ Therefore, this technology has been around for a while, as automated chatbots, voice recognition programs, etc. were introduced worldwide. However, the recent feat has been in the field of generative AI, which was made possible after the introduction of cloud computing and natural learning processing.

Prosecution is also using generative AI by using Facial Recognition Techniques (hereinafter known as 'FRT'). This technology alerts the authorities about the likelihood of a person committing a crime by reading their facial features, and it has been used in Russia to nab protestors.⁶ Such technology is highly intrusive and questions the idea of actus reus in criminal law, as the person is being prosecuted even before surpassing the stage of 'attempt'. We are in dire need of devising policies, legislations & frameworks that will address the scope and challenges of Artificial Intelligence. The European Union, in fact, has come up with legislation named – the EU AI Act, which will regulate artificial intelligence (AI) to ensure better conditions for developing and using this innovative technology.⁷

Coming to the use of AI in the field of judiciary. There are two factions in this debate. One school advocates using AI only in case management, research work and administrative work to assist in the smooth functioning of courtrooms. In contrast, the other school advocates the use of generative AI in adjudication, primarily in cases involving petty offences and small monetary. Additionally, certain jurisdictions have also started using AI for judicial adjudication and Alternative Dispute Redressal Mechanisms.

Now, to evaluate whether AI can replace Judges, various factors need to be considered. Some might suggest that AI, being a data-driven intelligent machine, is comparatively fair as it is not tainted with bias associated with human beings due to ethnicity, culture, education, and societal pressure. Further, such adjudication will be swifter, cheaper, and more efficient in terms of case disposal than human judges. Conversely, certain critics of AI-driven adjudication refute such claims of 'fairness' based on incomplete, inaccurate, or biased data. An algorithm developed by the Illinois Institute of Technology and the University of South Texas based on the data of the Supreme Court from 1791 to 2015 predicted the decisions and votes of Supreme Court justices from 1815 to 2015 with 70.2% accuracy, and 71.9% accuracy, which has surpassed the 66% predictive accuracy of jurists (Katz. et al. 2017; Stanila, 2020).⁸

With the rising incorporation of technology in the legal sphere, whether it is research work, drafting, pleading, or even filing of cases, it is evident that software using Artificial Intelligence

(hereinafter known as 'AI') will be widely used in future. Ten years down the line, we may enter an era where an AI Bot has replaced Judges in petty cases. Further, such technology may be deployed in public places or high-security areas that recognise a person's facial features to predict that they are about to commit a crime and, in turn, alert the authorities beforehand. AI may, on the one hand, come across as an efficient, impartial and cost-effective tool in the justice delivery system, but it may also pose several challenges for the lawmakers pertaining to culpability, ethics and threats of generative AI. Therefore, it is essential to examine the utility & challenges arising from integrating AI-based technology in judicial administration. Apart from navigating the utility and risks involved in the usage of such technology, this paper attempts to offer viable solutions for the said challenges. It would be prudent to quote the following observation made by Justice DY Chandrachud, Chief Justice of India *"Integrating AI in modern processes including court proceedings, raises complex ethical, legal, and practical considerations that demand a thorough examination. The use of AI in court adjudication presents both opportunities and challenges that warrant nuanced deliberation"*.⁹ Thus, as we enter the exciting era of generative AI, this paper focuses on harnessing AI's true potential in judicial adjudication and using it to address the ever-increasing pendency in Indian Courts.

USE OF AI IN ADJUDICATION: DEVELOPMENTS AROUND THE WORLD

Given the advent of AI-driven technology, its emergence as the new normal may be close. There may come a day when we arrive in a court governed by an AI Bot, specialising in certain fields of law, like – taxation, the Motor Vehicle Act, consumer rights, rent disputes, etc. This is not a farfetched dream but a reality in many jurisdictions in China.¹⁰ Three AI Internet Courts in China (Hangzhou, Beijing and Guangzhou) are judging disputes relating to online transactions of sale of goods and services, copyright and trademark, ownership and infringement of domains, trade disputes, and e-commerce product liability claims.¹¹

The average duration of these online trials in Hangzhou was 28 minutes, and the average processing period from filing to trial and conclusion by a verdict was 38 days.¹² The litigation process is conducted solely online, including the service of legal documents, the presentation of evidence, and the actual trial itself.¹³ To comply with the standards of a legal

trial, it opts for an 'in person and direct speech principle' through an online video system.¹⁴ Similarly, Estonia has been using an AI Bot to adjudicate claims under €7,000 since 2019. Both parties upload documents and other relevant information, and the AI system issues a decision that can be appealed to a human judge. Further, using AI as a mediator or conciliator to provide innovative solutions to the parties has excellent potential. However, attorneys will adjust their language to accommodate the algorithm and may even use unintelligible or fantastical language to influence the results.¹⁵ For instance, Canada is using AI as a mediator to settle disputes by providing unbiased and creative solutions to the parties.¹⁶ The negotiation app Smartsettle ONE, is so effective that it managed to resolve a three-month dispute over unpaid fees in less than an hour.¹⁷

The UK is using an AI bot to predict the possibility of a claim in the Civil Resolution Tribunal (CRT).¹⁸ It is being used to encourage people to take up mediation to save time and costs. In Mexico, AI is being utilised to compute the pension for the elderly. Surprisingly, AI is being used in the criminal justice system in the USA. COMPAS (Correctional Offender Management Profiling for Alternative Sanctions tool) is used to assess the likelihood that an offender will break the law again.¹⁹ An offender having a high COMPAS score is likely to re-offend. Therefore, it is used to compute the appropriate sentencing of the accused. Although this system is criticised for being biased towards African Americans.²⁰

In the case of *State v. Loomis*,²¹ the validity of this system was challenged on the grounds of lack of transparency (Access to source code was not given to the convict) & racial discrimination against him. But the US Supreme Court has upheld the validity of this system as being part of due process.²² It is worth noting that Indian judges have not missed AI, either. Justice Anoop Chitkara (Punjab and Haryana High Court), referred to ChatGPT, to determine the grant of bail in case of murder.²³ Upon search for 'the jurisprudence on bail when assailants assaulted with cruelty', ChatGPT responded, *'The jurisprudence on bail for cases where the assailants have assaulted with cruelty will depend on the specific circumstances of the case and the laws and regulations of the jurisdiction where the case is being tried. However, in general, if the assailants have been charged with a violent crime that involves cruelty, such as murder, aggravated assault, or torture, they may be considered a danger to*

the community and a flight risk.

*In such cases, the judge may be less inclined to grant bail or set the bail amount very high to ensure that the defendant appears in court and does not pose a risk to public safety. The severity of the assault, the defendant's criminal history, and the strength of the evidence against them are all factors that a judge will consider when deciding whether to grant bail. It is important to note that the presumption of innocence is a fundamental principle of the justice system, and all defendants are entitled to bail unless there are compelling reasons to deny it.'*²⁴ Though the court added a caveat that the AI platform was not used to decide the merits of the bail plea, the very notion that a constitutional court's functionary referred to AI raises questions both from a technological and a fundamental rights perspective.²⁵

In another significant case²⁶, Justice A Guneshwar Sharma (High Court of Manipur) turned to ChatGpt 3.5 to understand the nature of the post-Village Defence Force (VDF). The matter pertained to the wrongful termination of VDF, and due to the lack of explanation from the government, the court referred to AI, which found the following information – *'The Village Defence Force, popularly known as VDF, in Manipur was established to enhance local security and assist the police in maintaining law and order, especially in the rural areas. Initiated under the Manipur Police, the VDF consists of volunteers from the local communities who are trained and equipped to guard their villages against various threats, including insurgent activities and ethnic violence.'*²⁷

UTILITIES OF AI IN ADJUDICATION

The above-mentioned developments confirm the acceptance of AI as a reliable source of legal research and highlight the willingness of judges to use technology – to find an objective outlook regarding a sensitive issue, and it is up to their discretion whether to rely upon the same or not. Such objectivity is essential in adjudication; hence, AI, if used correctly, can transform the country's judicial ecosystem. Following are the potential Utilities of using AI in Adjudication:

- a) Fair – AI being a data driven intelligent machine, is comparatively fair as it is not tainted with biases usually associated with human beings due to – ethnicity, culture, education and

societal pressure. Even the much criticised power of Master of Roaster, wherein the Chief Justice, allocates the cases to different judges, can be assigned to AI powered bot, based on the qualification and background of the Judges.

b) Reduce Pendency – As per the latest NJDG data, 4.5 Crore cases are pending in India, out of which 69% are older than one year. Since AI can take up hundreds of cases each day, such adjudication will be swifter, cheaper and more efficient in terms of case disposal, than human judges. This would in turn reduce pendency in courts.

c) Reduce Delay – Justice delayed is justice denied. As the adjudication process becomes automated, the average time for trial will significantly reduce to months, instead of years. If commercial cases under a certain valuation are mandatorily referred to AI-adjudicated courts, it will boost the economy and instil a sense of confidence among parties and investors.

d) More Accurate—The Illinois Institute of Technology and the University of South Texas, based on the Supreme Court data from 1791 to 2015, predicted the decisions and votes of Supreme Court justices from 1815 to 2015 with 70.2% and 71.9% accuracy, respectively, surpassing the 66% predictive accuracy of jurists.

e) Easing the Burden of Courts—India has only 21 judges per million people.²⁸ AI has the potential to significantly ease the workload of judges by undertaking research work, appreciating evidence, transcribing speeches, finding similar cases/precedents, and writing judgments.

f) Creative Solutions—With its huge data mining capacity, AI may provide equitable and creative solutions to the parties. Given its objectivity, Companies, in their terms and conditions, insist upon pre-trial arbitration by an AI-powered bot. This would save the much-needed time and litigation costs of the companies and the parties.

g) Potential Use in Administrative Law – Given the specified area of expertise & lack of formal court formalities, Tribunals have huge potential to incorporate AI in adjudication. The reason beings, mining subject specific laws & precedents, and getting real time AI Courtrooms. For instance, computation of compensation in Motor Vehicle Act, computation of Maintenance under various acts, Consumer Rights forum, industrial disputes, tax disputes, etc. Such cases are massive in volume but require an objective viewpoint, in which AI can help.

h) Corporate Solutions—As the number of commercial transactions and corporate

infrastructure is booming in the country, AI-assisted mediation or arbitration before trial may be mandatory. This will ease the burden of courts and reduce delays in commercial adjudication. Both these factors contribute to the ease of doing business and will enhance the confidence of investors.

i) Shorten the Tedious Court Procedures – Apart from adjudication, if the entire court procedure, including filing, sending summons, recording evidence, transcribing etc. can be automated via - AI assisted platform, then the valuable time of the court and parties can be saved. In fact, the system can be coded in such a way, that any defect in filing can be automatically detected and the said party is alerted about it. This system will assist in saving the time and resources of the court.

j) Help in Criminal Profiling – AI has the ability to analyse data from various sources (e.g., social media activities, call records, travel history, browsing history and other information), to suggest a list of suspects in crime. Further, it can aid in criminal profiling by analysing crime clusters, patterns and correlations with environmental factors. For instance, Jamtara, in Jharkhand, is infamous for running phishing scams across India. Various factors can be identified for it like – lack of education and employment opportunities, inefficient police vigilance etc. Such data backed criminal profiling will in turn facilitate the government in curbing those offences, by deploying tailor-made policies.

CHALLENGES OF AI IN ADJUDICATION

However, implementing such AI-assisted adjudication is not entirely a piece of cake. With the benefits of AI, several important challenges need to be factored in, for instance:

a) Anchoring Effect—This refers to people's bias towards computer-generated data. Most judges follow the result generated by AI without making an independent decision.²⁹ Thus, judges fall victim to bias in the face of unchecked AI outcomes.³⁰ Fair Trial being the foundation stone of fair trial in India, it needs to be ensured that judges do not become prejudicial due to the use of such technology.

b) Lack of accountability—With the appellate authority, legislation, and pressure from the bar and media in place, a human judge is accountable to a number of authorities, but an AI bot is a machine and cannot be penalised. In the absence of a robust policy framework

fastening liability upon the makers of the technology, regular screening, adherence to a particular code of conduct, and systems should be put in place to avoid high-risk behaviour.

c) Garbage in - Garbage Out Effect – Some critics question the authenticity of the data mined for such technology. If the data fed to the program is biased, the AI-generated outcome will also be biased.³¹ For instance, the racial incarceration of Blacks and Latin Americans in the USA is likely to reflect in the adjudication by AI. This effect is known as the ‘garbage in – garbage out’. To resolve it, various experts suggest that the data should be actively made unbiased, but this premise of feeding doctored data is in itself unethical.³²

d) Authenticity of Blockchain Evidence – Given that AI relies heavily upon blockchain evidence, experts have warned that blockchain isn't tamper-proof.³³ The Supreme People's Court in China disagrees with this proposition and states that such data is reliable and verifiable.³⁴

e) Need to Enhance Machine Learning – The current legislation is written in English, but some legislation can be written in a way that computers can process it. This is suggested by Professor Lyria Bennett Moses, Director of the Allens Hub for Technology, Law and Innovation-

“It is much easier for AI systems to answer legal questions where the laws are written in a language that computers can understand. If we start with rules written in computer code, then they can be executed by a computer automatically.”³⁵

f) Appreciation of Evidence – Despite all the technological advancements in the field of generative AI, it is far from matching the complexities of the human mind. For instance, the quality of the human mind to gauge through emotions like fear, ignorance, deceit, anger, etc., is uncanny. This skill is handy in judging the demeanour of the accused and witnesses and assists the judge in adjudication. Although the much-talked-about facial recognition technology (FRT) is an attempt to bridge this gap, its veracity is yet to be tested.

g) Intellectual Property in the realm of AI – Since generative AI can create its own music, images, codes, and written content, the ethos of intellectual property jurisprudence is present worldwide. Who will get the copyright with open-source AI-generated content – the company owning the AI software or the person giving instructions to the AI software (user) or no one? Different courts across the world are offering different interpretations to this conundrum. Without clear regulations, most countries still associate copyright as a

human's intellectual right to create an original piece of work and give exclusive use for its use and distribution.

SOLUTIONS OF AI IN ADJUDICATION

In the face of such obstacles, a solution-centric approach should be adopted to tackle the challenges of AI software. As to the hallucinations against such technology, one needs to focus on the potential of these intelligent programs and integrate them to reduce the ever-growing pendency in the judicial system. Following are some viable solutions.

a) Training of Judges & Other Stakeholders—The notion that those who know technology lack the knowledge of the law and those who know the law lack the knowledge of technology needs to change. There is a need for collaborative programs, certifications, and research centres for the betterment of this technology in the legal sphere is need of the hour. UNESCO has started a programme to train judges to harness AI in justice.

b) Removing the Bias Inherent in Data—Special attention shall be directed towards curbing biased outcomes when the data itself is discriminatory. For instance, people of certain minorities, ethnicities, or localities may be associated with certain types of crimes, but this, in turn, should not affect the outcome of the AI-based system or the trend of handing down inadequate punishment to the wrongdoer.

c) Addressing Data Privacy – With the risk of data tampering, deep fakes and the rise of fraudulent activities using AI, it is important that AI systems ensure the privacy of the users in compliance with data protection regulations like GDPR (General Data Protection Regulation) & DPDP Act (Digital Personal Data Protection Act, 2023). To meet future requirements, the state should implement data encryption, anonymization techniques, and secure data storage solutions.

d) Review by Human Judges—Given the nascent stage of AI adjudication, it is better to introduce a prototype that is run on a trial basis. A resolution process must be put in place to review, approve, or override the decision of AI Bots by human judges. Further, such cases may be tried by human judges that involve a question of law.

e) Limit the Scope—Primarily, only such cases must be referred for AI-based adjudication that is trivial or involves only fines of under Rs. 10,000 or the ones that can be tried summarily. For instance, Fines under the Motor Vehicle Act Cheque Bounce cases, Rent

Disputes, Consumer Rights Disputes Cheque Bounce Cases, and challans under the Water Act, Electricity Act, etc. Though trivial, such cases would build public trust and provide room for improvement.

f) Bring More Transparency—Technology should only be relied upon when it is transparent, reliable, and accurate. AI should not remain a black box, but efforts should be made to make it fair and transparent. Currently, if AI comes up with a defamatory response regarding a person, there is no way to find out on what material the system based its response. Efforts should be made to resolve this debacle.

g) Legislations be Coded – It will be much better for systems to answer legal questions where the laws are written in a language that computers can understand. If we start with rules written in computer code, then they can be executed by a computer automatically.

h) Coherent AI Policy—A robust policy framework fastens liability upon the technology makers, regular screening, adherence to a particular code of conduct, and systems being put in place to avoid high-risk behaviour. To harness the full potential of this technology, a coherent policy regulating the use of AI is essential. For instance, the European Union has introduced the EU AI Act, which will regulate artificial intelligence (AI) to ensure better conditions for developing and using this innovative technology.³⁶

The act takes a risk-based approach: the higher the risk, the stricter the rules.³⁷ It allocates various responsibilities to the makers and users of AI. It prohibits using AI in social scoring, biometric categorisation of sensitive data, predictive policing for individuals, emotion recognition at the workplace, etc.³⁸ Further, the Act imposes fines of up to 35 million euros or 7% of turnover.³⁹ As the next Silicon Valley, India also needs robust legislation or regulations centring around the use of AI in the country. The focus should be on bringing more transparency and curbing unethical and high-risk use of AI. Specific provisions shall be introduced for curbing and penalising the use of AI in creating defamatory content, deep fakes, fraudulent activities using - voice theft, fake news, etc. The aim should be to promote the ethical use of AI and impose responsibility on developers and users for violating these regulations.

Further, the State should endeavour to encourage the adaptation of this technology across its departments. This will reduce the stress upon employees, minimise the processing time, and make people habitual of adapting AI-enabled technology.

i) Addressing the ethical considerations – A human judge has the discretion of examining those present in court and taking into factors that are not necessarily listed in legislation but are important for an equitable justice delivery system. For instance, in a maintenance case, while computing just compensation for the wife, the judge may consider the – demeanour, way of speaking, willingness to pay and capacity to gain lawful employment by examining the husband in court. Despite the husband being unemployed, the court reserves the discretion to decide whether unemployment is willful. Such complexities of human behaviour are difficult for an AI bot to address. But with the improvement in facial recognition technology, steps should be taken towards a culturally & ethically intelligent bot. However, such prototypes shall primarily be tested in trivial matters only, with a review mechanism in place.

j) Continuous Assessment—With regular monitoring, efforts shall be made to weed out discrepancies and challenges in AI-enabled adjudication. Parties and other stakeholders must seek periodic feedback as to their experiences, time taken, ease of trial, challenges faced, etc. Efforts should be made to make the justice delivery system fair, reasonable, efficient, and hassle-free.

WAY FORWARD

With the ever-rising pendency of cases and infrastructural limitations, it is high time technology was relied upon to deal with cases that are devoid of judicial discretion, like petty offences involving only fines. Such automated adjudication may pave the way for a state-of-the-art Judicial System, where decisions are churned out at an unprecedented pace and the workload of both judges, and their support staff is eased by technology. Further, such a data-driven adjudicatory system will facilitate policymakers' identification of the patterns of several types of litigation. This will help them address the causes of such litigation and resolve them.

In this context, the following words of Chief Justice DY Chandrachud are worth mentioning,

"As we navigate the integration of AI into the legal domain, it is imperative that we remain vigilant in addressing the systemic challenges and ensuring that AI technologies serve to enhance, rather than undermine, the pursuit of justice for all. By embracing collaboration and fostering international cooperation, we establish a framework promoting responsible and ethical use of AI technologies across borders. This paves the way for a future where technology empowers and uplifts every member of society, fostering inclusivity, innovation, and progress. Together, we shape a world where the promise of AI is realized for the betterment of humanity."⁴⁰

Therefore, AI has immense potential to transform the adjudication system. Whether it is case management, legal research, computational analysis, mediation or simply adjudication – AI has the innate ability to ease the burden of courts. It can significantly reduce pendency, if utilised, across a wide range of subject matters that form a vast majority of commercial disputes and can be delegated to AI to save time & resources of the parties. Further, the objective nature of AI can be utilised in mandatory pre-trial mediation, as it can find equitable and creative solutions. It can also assist the parties in calculating the approximate time and money to proceed with a trial. This way, parties can be encouraged to settle matters outside courts instead of a long-drawn legal battle, resulting in the loss of one party and the win of another.

As to the potential risks involved with this technology, it is better to formulate comprehensive guidelines for developers and users and regulate the use of AI for the welfare of society. Given the availability of affordable internet connectivity across India, developments of digital payments, e-commerce, quick commerce, digitisation of courts & booming IT industry in India, it is time that we harness the AI capabilities of the nation to address the rising litigation in the country.

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³¹ Krishna Ravishankar and Parul Anand, 'AI Judges: The Question of AI's Role in Indian Judicial Decision-Making', August 8 2023 <https://www.calj.in/post/ai-judges-the-question-of-ai-s-role-in-indian-judicial-decision-making> (Visited on April 26, 2024).

³² *Ibid* 31.

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³⁸ Anonymous, 'Artificial intelligence act: Council and Parliament strike a deal on the first rules for AI in the world', February 2, 2024

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³⁹ Ibid 38.

⁴⁰ Justice DY Chandrachud (Chief Justice of India), Speaking at the India-Singapore Judicial Conference, April 13, 2024, available at: <https://www.youtube.com/watch?v=dvB1lBqcw20> (Visited on April 24, 2024)