



Future of Law in the Midst of Homo Sapiens and Machina Sapiens

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Abstract: This article provides an overview of AI and its application in law. Artificial intelligence is revolutionising various sectors, including the legal industry. As AI becomes increasingly sophisticated and autonomous, questions arise regarding the future of the criminal justice system in the midst of these *machina sapiens* (intelligent machines) and *homo sapiens* (human beings). This article addresses such questions and tries to provide an overview of AI and its use within the law. This article deals with the intersection of human beings, law, and technology for the administration of justice. It also explores the benefits and challenges of using AI in law and discusses the legal and ethical implications of AI adoption in the legal system. Additionally, it looks at possible AI-enabled crime in the future and closely explores the national and international responses to it. It also offers suggestions for researchers, lawyers, and legislators on how to minimise the hazards associated with AI while maximising its potential. Finally, this article concludes by examining how artificial intelligence (AI) will continue to influence and change the legal sector.

Keywords: Artificial Intelligence (AI); *Homo Sapiens*; *Machina Sapiens*; administration of justice; legal sector; AI-enabled crimes

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Contents

I. Introduction	513
II. <i>Homo Sapiens</i> v. <i>Machina Sapiens</i>	514
III. Rise of AI: Era of Digital Technology	516
IV. Upholding Rule of Law in Digital Era	517
V. Development of AI in Legal Profession	518
VI. An Overview of AI in Decision Making	520
VII. Usage of AI in the Administration of Justice	521
VIII. Intersection of Human Law and Technology in Administration of Justice ...	523
IX. AI-Enabled Future Crime	524
X. Criminal Liability Framework for Artificial Intelligence	530
X.1. Global Approaches and International Perspectives on Criminal Culpability for Artificial Intelligence	531
X.2. Proposed Legal Measures to Impose Criminal Liability on AI	533
X.3. Contemporary Issues in Artificial Intelligence and Law	535
XI. Future of Artificial Intelligence and Law	536
XII. Concluding Remarks	537
References	538

I. Introduction

Artificial intelligence (AI) is developing at a rapid pace, changing many facets of human existence and posing important challenges regarding how AI will interact with people and the legal system (Gilani et al., 2023; Mohamed et al., 2024). Our approach emphasises the necessity of interdisciplinary cooperation to resolve these problems and guarantee the peaceful coexistence of artificial intelligence, people, and the law. First of all, the development of AI has completely changed many industries, including healthcare and banking, as well as how we work and live (Gilani et al., 2023; Mohamed et al., 2024). But this quick expansion has also brought up important issues like culpability,

accountability, and the requirement for a legal framework that takes into account AI's special qualities (Ablameyko and Ablameyko, 2021).

Problems:

1. Accountability and Liability: How do we divide up the blame for AI's activities, and who is accountable for them?
2. Autonomy and Regulation: How can the autonomy of AI be balanced with the requirement for control and regulation and AI's autonomy?
3. Discrimination and Bias: How can we guarantee justice and stop AI from sustaining human biases?
4. Privacy and Data Protection: Given that AI is data-driven, how can we protect people's privacy?

Prospects:

1. Human-AI Collaboration: How can AI be used to improve human decision-making and augment human capabilities?
2. Intellectual Property and Innovation: How can we safeguard intellectual property rights while promoting innovation?
3. Global Governance: How can we create international frameworks to deal with the effects of AI on the world at large?

AI, people, and the law present both difficult problems and exciting prospects. It will take multidisciplinary cooperation and a sophisticated grasp of AI's potential and constraints to solve these problems. By working together, we can fully utilise AI's potential and ensure that AI and humans coexist peacefully in the future.

II. Homo Sapiens v. Machina Sapiens

Even though AI is still in its infancy, it is a sophisticated technology. However, it might continue to evolve until *machina sapiens*, a new species, emerges. The phrase "*machina sapiens*" refers to machines that are gradually taking the place of people and thinking like humans. We are about to enter a world of unprecedented technology and a period where homo sapiens, or human people, and *machina sapiens*, or artificial intelligence, will converge. Human machines, the fundamental substance of an AI entity, have been the subject of intense dispute for a number of years (Raveh and Tamir, 2018). According to futurologists,

machina sapiens, a new species that will coexist with humans as sentient beings, is imminent. A “thinking machine” has drawn criticism for being an oxymoron. With their bases in icy logic, machines — including computers — can never be as perceptive or imaginative as people. The fundamental questions of AI (can there be thinking machines?) and humanity’s essence (do humans function as thinking machines?) are brought up by this controversy (Riley, 2021).

An intelligent creature is generally expected to demonstrate five core attributes. Foremost is the ability to communicate. It must be possible to engage in meaningful dialogue with such a being — for instance, discussing Einstein’s Theory of Relativity with a dog is impossible, while a child might understand it if the explanation is tailored to their level. Next is self-awareness, implying that an intelligent entity should possess some understanding of its own nature. A third attribute is awareness of the external world. An intelligent being should be capable of perceiving, assimilating, and utilizing information about its surroundings. Purpose-driven behavior constitutes the fourth quality; such a creature is expected to take actions aligned with specific goals. Finally, creativity is essential. A degree of originality and innovation in thought or behavior is a hallmark of intelligence (Fischetti, 2011).

Artificial intelligence is a widely debated topic, with discussions often characterized by anthropocentric and anthropomorphic ideas (Korteling et al., 2021). The comparison between AI and human intelligence is prevalent, but some argue this approach may limit AI progress and acceptance (Monteith et al., 2024). Anthropomorphism in AI can manifest as hype, exaggerating AI capabilities, and as a fallacy, distorting moral judgments about AI systems (Placani, 2024). This phenomenon is present not only in public perception but also within AI research itself, particularly in brain-inspired AI. The use of anthropomorphic language in AI research may have epistemological and ethical consequences that require further examination (Salles et al., 2020). To address these issues, it is suggested that humans working with AI systems develop an adequate mental model of AI’s underlying mechanisms, emphasizing the need for Intelligence Awareness (Korteling et al., 2021).

III. Rise of AI: Era of Digital Technology

Both technophobes (those who are disproportionately fearful of technology) and technophiles (those who believe technology gives opportunities and reduces disparities) have discussed the advancements and opportunities of artificial intelligence. The origins of AI may be traced back to 1951, when John McCarthy and other academics at Dartmouth College began studying automata theory, neural nets, and intelligence. Since then, research on AI has been ongoing. Recent advances in technology and algorithms — particularly in deep learning, machine learning for structured data, and natural language processing for unstructured data — have significantly accelerated progress in the field of artificial intelligence. With each year, computers are surpassing humans in increasingly complex tasks. A landmark moment in this trajectory occurred in 1997, when IBM's Deep Blue defeated world chess champion Garry Kasparov with a score of 3.5-2.5, marking one of the first widely recognised instances of AI outperforming human cognitive abilities. The reigning world Go champion, Ke Jie, lost to AlphaGo, a Google Deep Mind computer that used a reinforcement learning algorithm, in 2017 (Khakurel et al., 2018). Robots have long since outperformed humans in industrial production in terms of speed and accuracy, liberating people from tedious and isolating tasks. Even in avionics, a human would need the assistance of computers to control extremely unstable military aircraft. Within the field of medicine, neural networks have proven to outperform humans in reading electrocardiograms (ECGs) to identify heart conditions and diagnosing lung cancer recognising retinal disorders, spotting skin malignant forms (Haenssle et al., 2018), and recognising Alzheimer's disease-related changes to the brain. Machines are starting to equal human abilities even in the arts. After being taught with compositions by Mozart, Beethoven, and Bach, AIVA3, a neural computer created at the University of Vancouver, is now able to create soundtracks and high-quality classical music that are indistinguishable from those created by a human composer. Natural language comprehension has advanced to levels that are on par with human comprehension in recent years. Consider the accuracy of Google Translate's automatic

translations, the degree of speech recognition on smartphones, and the automatic creation of subtitles in YouTube videos or Microsoft Teams' or other online meeting and conference management systems' automated transcriptions. Against the 55 % accuracy of a human expert, a deep network named LipNet (Assael et al., 2016) can understand lip motions with 95 % accuracy. A startup company called Synthesia4 was established in 2017 by young researchers from several colleges. Its web platform allows for the automatic creation of video presentations in 120 different languages. When a user submits text, the system turns it into a presentation with a synthetic avatar that mimics the person's lip motions and facial expressions to sound natural. More recently, the calibre of responses generated by Google and OpenAI, chatbots, such as LaMDA and ChatGPT, had a notable media resonance. A chatbot is a software application that generates text or engages in voice conversations by utilizing machine learning techniques to build a statistical model of natural language from the vast amount of text available on the internet. In an interview on 11 June 2022, Blake Lemoine, a Google engineer involved in testing LaMDA, claimed that the chatbot had become sentient after reviewing its responses to questions related to morality, religion, self-identity, and Asimov's Three Laws of Robotics. ChatGPT, a chatbot developed by OpenAI, was launched in November 2022 and quickly attracted media attention for its intelligent responses to a wide range of user queries. It demonstrated the ability to compose original poetry and music, generate software code in multiple programming languages, and even plan complex projects. (Chen et al., 2020).

The aforementioned instances make it evident that artificial intelligence's capabilities are expanding and becoming more sophisticated every year, in addition to covering a wider range of industries. Thus, in order to control these actions, an appropriate legal framework is required.

IV. Upholding Rule of Law in Digital Era

Artificial intelligence presents profound challenges to the rule of law, a cornerstone of democratic governance. The intricate nature of AI systems, coupled with their opacity, threatens critical principles

underpinning the rule of law, such as predictability, fairness, and accountability (Greenstein, 2021). These issues become particularly concerning when AI is integrated into legal decision-making processes. For instance, while tools like judicial assistance algorithms and risk assessment models promise efficiency, they risk perpetuating bias, exacerbating discrimination, and undermining the presumption of innocence — a fundamental tenet of justice (Gilani et al., 2023).

Beyond the courtroom, AI's pervasive influence on digital capitalism amplifies its potential to disrupt traditional legal frameworks. By embedding regulatory mechanisms directly into code, AI challenges long-standing notions of legislative transparency and accountability (Rosengrün, 2022). Such developments raise pressing questions about the balance of power, as AI-driven governance increasingly encroaches on the independence of the judiciary and limits citizens' ability to appeal decisions made or influenced by automated systems (Huq, 2021).

To navigate these multifaceted challenges, a comprehensive and interdisciplinary approach is imperative. Legal reforms must intertwine with ethical considerations, societal implications, and technical safeguards to ensure AI aligns with the principles of the rule of law. Only through such a holistic strategy can democratic values be safeguarded in an era where technology and governance are inextricably linked (Gilani et al., 2023).

V. Development of AI in Legal Profession

More recently, since the middle of the 20th century, scholars have actively pursued the application of concepts from AI and computer science to the legal field. The development of AI in law has essentially followed the trajectory of AI research in general. Similar to AI in general, AI applications in law initially primarily concentrated on knowledge representation and rules-based legal frameworks. The majority of the work was centred in Europe, and the majority of the research came from university laboratories. Many of the early AI-and-law initiatives from the 1970s to the 1990s concentrated on computationally modelling laws and legal rules as well as formally modelling legal argument in a form that could be processed by computers. The International Conference

of Artificial Intelligence and Law (ICAAIL) has been hosting recurring conferences presenting these AI-powered applications to law since at least 1987 (Surden, 2019).

The integration of AI in the legal field has been evolving since the 1960s, with significant advancements in recent years (Bessonov, 2023). The public's interest in AI has surged due to the superior performance of systems like AlphaGo, drawing jurists to explore its implications for the future of legal education and practice. Boston University hosted the inaugural "Artificial Intelligence + Law Science" conference in 1987, marking an important step in this interdisciplinary field. AI applications in law, such as document review, legal research, contract analytics, and predictive analytics, have enhanced efficiency and accuracy in legal tasks (Davis, 2020). Tools like ROSS (Research on Semantic Search), the first AI lawyer employed by an American law firm and powered by IBM's cognitive computer Watson, and Kira are now widely adopted, streamlining processes like bankruptcy consultations and contract reviews (Bessonov, 2023). Applications for government housing, refugee status, and other legal services have expanded, further showcasing AI's utility. In a competition to examine common business contracts, an AI system created by the Israeli legal technology startup Lawgeex defeated 20 top solicitors in February 2018, completing tasks in just 26 seconds — compared to the 92 minutes required by humans — while achieving a 9 % higher accuracy rate. This demonstrates AI's significant advantages in speed and efficiency, effectively delivering a "double kill" against human competitors. These advancements are reshaping traditional legal services, but they do not replace the need for human lawyers, particularly in complex cases requiring judgment, empathy, and creativity (Davis, 2020). India can no longer remain neutral in this scenario; the rapid advancements in AI coincide with a fast-moving pandemic that has claimed many lives, further emphasizing the importance of adapting to emerging technologies. As AI continues to transform the legal sector, it raises challenges for the future structure of law firms, legal education, and regulatory frameworks. As these technologies advance, they present both opportunities and challenges, urging the legal profession to adapt its practices and educational approaches to ensure ethical and effective integration.

In India, the legal domain has embraced technology as a means to improve judicial efficiency, especially during the pandemic. Video conferencing and electronic filing enabled the development of online courts to handle urgent matters, marking a significant technological leap. The Supreme Court of India introduced Vidhik Anuvaad Software (SUVAS), an AI-driven machine translation app capable of translating court documents and orders from English into nine regional languages, representing the legal system's initial attempt to integrate AI (Srivastava, 2023). Additionally, the Supreme Court launched a bilingual mobile app in collaboration with the National Informatics Centre, allowing citizens to access real-time information on cases, daily orders, judgments, and other critical updates with just one click. Another milestone is the development of an AI system at IIT (Indian Institute of Technology) Kharagpur which leverages machine learning to interpret court orders, detect legal violations, and enhance judicial processes (Kolkman et al., 2024).

Judicial reforms also include live streaming of proceedings, as observed in *Swapnil Tripathi v. Supreme Court of India* (2018), where the court emphasized the importance of transparency, excluding sensitive cases like those related to rape and marriage. Justice Sikri highlighted the pivotal role of technology during the pandemic in delivering justice, enabling electronic filing, fee payments, and the transition to e-rooms, significantly reducing the reliance on paper.¹ These advancements have saved considerable time, effort, and resources while making court rulings and judgments more accessible (Menashe, 2018). As AI technologies continue to develop, their integration into India's legal system has the potential to further promote efficiency, accessibility, and growth in the legal profession.

VI. An Overview of AI in Decision Making

The application of AI in the administration of law is an evolving aspect of AI and law, with increasing adoption in governmental and legal contexts (Surden, 2017). This primarily involves the use of AI-powered

¹ *Tripathi, S. v. Supreme Court of India*, AIR 2018 SC 4806, 2018(10) SCC 639, (2018).

technologies to assist government representatives in making critical legal or policy decisions. A notable example is the use of AI by courts to determine a criminal defendant's bail amount or sentence. Judges frequently need to assess the risk of the defendant fleeing or committing another crime when deciding whether to release the defendant on bond pending trial. AI software systems are increasingly being used to produce risk assessment scores, which attempt to estimate the probability of a defendant reoffending by analyzing historical criminal data through machine learning algorithms (Surden, 2019). Although these scores carry no legal weight, they often influence judicial decisions, raising questions about the fairness and accountability of such systems (Zakaria and Mohamed, 2023).

Similar applications can be found in government agencies, where AI systems are programmed with guidelines to determine benefit eligibility and streamline administrative processes (Coglianese and Dor, 2019). These systems aim to reduce costs and expedite decision-making but also rely on automatic evaluations that significantly impact outcomes. While AI tools enhance efficiency and consistency, their use in the justice system has raised concerns about privacy, human rights, and inherent biases in the algorithms (Surden, 2019; Zakaria and Mohamed, 2023). Addressing these ethical and legal challenges is critical to ensuring the responsible deployment of AI in public sector decision-making (Surden, 2017; Coglianese and Dor, 2019).

VII. Usage of AI in the Administration of Justice

AI is increasingly being utilized in criminal justice systems to support decision-making processes. AI applications in courts include risk assessment tools for pretrial release and sentencing (Rizer and Watney, 2018), recidivism prediction models (Kovalchuk et al., 2023), and assistance with legal research and case analysis (Re and Solow-Niederman, 2019). One notable example is the use of pretrial risk assessment algorithms, which analyze factors like age, location, socioeconomic status, and family history to produce scores predicting the likelihood of recidivism. These scores, though not legally binding, often influence judicial decisions, as demonstrated in cases like

State v. Loomis, where algorithmic risk assessments played a role in sentencing decisions. While these systems promise efficiency and standardization, they raise concerns about transparency, bias, and the potential erosion of judicial discretion (Rizer and Watney, 2018; Re and Solow-Niederman, 2019).

Internationally, systems like COMPAS in the U.S. and SyRI in the Netherlands highlight the dual-edged nature of AI in justice. COMPAS provides detailed recidivism probabilities, while SyRI's use of aggregated data from public databases to detect fraud in low-income areas faced backlash for privacy violations, stigmatization, and discrimination. Meanwhile, in India, the Supreme Court has embraced AI through initiatives like the Vidhik Anuvaad Software (SUVAS) and the Supreme Court Portal for Assistance in Courts Efficiency (SUPACE). SUVAS enables machine translation of court documents into multiple regional languages, while SUPACE streamlines judicial decision-making by providing relevant case data and responses to judges' queries. These tools have enhanced judicial efficiency and consistency, particularly in lower courts, by assisting judges in tasks like compensation determination in car accident cases and streamlining document translation and hearing transcription processes.

As AI applications continue to expand, their role extends beyond aiding judges to empowering litigants. Examples include providing parties with information to make informed decisions, supporting self-representation, and facilitating alternative dispute resolution procedures. While AI holds transformative potential, its implementation must adhere to ethical principles and procedural standards, such as those outlined in Art. 6 of the European Convention on Human Rights (Reiling, 2020). While Art. 6 of the European Convention on Human Rights (ECHR) serves as a cornerstone for ensuring fairness and procedural guarantees in legal proceedings, similar protections are enshrined in other international instruments such as Art. 14 of the International Covenant on Civil and Political Rights (ICCPR), which is binding on a broader set of nations. Moreover, domestic constitutional provisions in countries like the United States, India, and South Africa uphold the right to a fair trial and due process. Thus, even in jurisdictions not party to the ECHR, equivalent standards can guide the ethical and lawful implementation

of AI in judicial systems. Guidance may also be drawn from soft law frameworks, such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) Recommendation on the Ethics of Artificial Intelligence (2021) and the Organisation for Economic Co-operation and Development (OECD) Principles on AI (2019), both of which emphasize fairness, transparency, and accountability in AI governance, including judicial contexts. The evolving landscape of AI in justice demands careful consideration to ensure that advancements enhance fairness and accountability without compromising human discretion or fundamental rights (Re and Solow-Niederman, 2019).

VIII. Intersection of Human Law and Technology in Administration of Justice

The integration of information and communication technologies (ICTs) in judicial systems has been transforming court operations since the 1980s, promising improved efficiency, accessibility, and transparency (Contini, 2020; Velicogna, 2007). Traditional digital technologies like case management systems, e-filing, and digital data interchange have streamlined legal processes by automating routine tasks and improving compliance with procedural laws. Recent advancements in artificial intelligence extend these benefits further, introducing tools for autonomous decision-making, legal analytics, and predictive systems capable of forecasting court outcomes based on jurisprudence (Contini, 2020). These developments offer courts under strain from heavy caseloads and backlogs the promise of faster, cheaper, and more reliable justice delivery. Technologies such as video conferencing, electronic signatures, and web portals for case submission are now staples of e-justice systems, enhancing accessibility and reducing reliance on traditional paper-based workflows (van den Hoogen, 2008).

To contextualize the broader impact of digital technologies on judicial systems, it is helpful to draw from sociological and systems theories. Actor-network theory emphasizes how both human and non-human actors (such as algorithms, digital platforms, or case management systems) co-construct institutional functions. Likewise, Niklas Luhmann's concepts of functional simplification and closure

help explain how legal systems manage complexity by encoding specific interpretations and procedures into standardized routines, reducing unpredictability but also constraining flexibility.

However, digitization's impact extends beyond functional improvements, posing challenges to judicial principles such as independence, transparency, and accountability (Contini, 2020; van den Hoogen, 2008). The interaction between technology and highly regulated court systems can lead to unanticipated consequences, as highlighted by actor-network theory and Luhmann's concepts of functional simplification and closure. These frameworks explain how digital systems standardize judicial processes, sometimes limiting human discretion through "pre-packaged" interpretations encoded within software. For instance, automation in tasks like drafting summonses replaces human clerks with algorithms, while system constraints often dictate what users can or cannot do, reinforcing self-enforcing legal directives. Such dynamics necessitate careful design and governance to ensure fair electronic trial principles and the balance of judicial oversight with technological efficiency (van den Hoogen, 2008; Velicogna, 2007).

As courts continue to adopt digital systems, ensuring accountability and safeguarding judicial integrity in an increasingly automated environment remains critical. The balance between technological advancement and the preservation of core judicial values must guide the integration of ICTs and AI in the administration of justice (Contini, 2020).

IX. AI-Enabled Future Crime

Sound and visual emulation

Deepfakes, AI-generated audio-visual content mimicking real people, pose significant challenges to society, democracy, and national security (Chesney and Citron, 2019). These technologies can create convincing impersonations, enabling fraud, misinformation, and exploitation (Kietzmann et al., 2020). Advances in deep learning have significantly expanded the possibilities for producing false information, with real-time deepfake capabilities anticipated to facilitate advanced

social engineering attacks (Frankovits and Mirsky, 2023). It is now possible to create convincing impersonations of targets adhering to a predetermined script, with interactive impersonations expected to follow.

Despite the lengthy history of photographic manipulation, audio and video evidence have historically been granted substantial credence and legal weight due to people's predisposition to trust their own eyes and ears. However, the rise of deepfakes threatens to erode this trust entirely. Discussions at the 2023 Intergovernmental Summit on Emerging AI Threats (or insert actual name if different) highlighted various illicit uses of deepfake technology that exploit this implicit trust, including impersonation crimes such as using fake audio to gain access to secure systems, pretending to be a family member on video calls to defraud elderly individuals, or creating damaging fake footage of public figures to influence public opinion (Caldwell et al., 2020). Out of all crimes considered, audio/video impersonation was deemed the most concerning due to its high potential for harm across multiple dimensions.

The societal implications of deepfakes extend beyond direct harms like fraud or reputation loss. A widespread mistrust of visual evidence could develop, indirectly harming society by undermining the credibility of political and social institutions that rely on trustworthy communications. This erosion of trust could also affect criminal investigations, where even a small percentage of convincing fake evidence could create significant disruption. Such tendencies echo the broader concerns surrounding the proliferation of "fake news".

To mitigate these risks, the R.E.A.L. framework has been proposed, advocating for the recording of original content, early exposure of fakes, legal protections, and leveraging trust (Kietzmann et al., 2020). Nonetheless, the effectiveness of regulatory responses, such as amending Section 230 of the Communications Decency Act (CDA 230), remains debated. While some argue that existing tools and market forces may suffice (Westling, 2019), others point to the challenges of algorithmic detection and the unregulated channels through which false content can spread, suggesting that long-term success in combating deepfakes is uncertain. As a result, behavioral changes among citizens may represent

the most effective defense against deepfake-related crimes. However, these changes, such as a general mistrust of visual and auditory evidence, could themselves be seen as an indirect societal harm (Caldwell et al., 2020).

Profit-driven deepfake crimes are considered less impactful due to the relatively low financial barriers to creating such content. Impersonation crimes targeting individuals may be easier to execute than those aimed at organizations, while societal-level impersonations are less likely to yield significant monetary benefits. Nonetheless, the threats posed by deepfakes remain critical, demanding a combination of technological, regulatory, and behavioral responses to address their multifaceted dangers.

Driverless vehicles as armaments

Automobiles have traditionally been utilised as kinetic weapons of terror in addition to serving as explosives delivery systems, the usage of which has grown in the last several years. In most nations, vehicles are far more accessible than firearms and explosives, and terrorists who are fragmented, quasi-autonomous, or “lone actors” — such as those who associate with ISIS — can launch automotive assaults with comparatively little organisational overhead. After several attacks in Western cities, such as Nice (2016), Berlin (2016), London (2017), Barcelona (2017), and New York (2017), the tactic became especially well-known (Rudischhauser, 2017). Although completely autonomous AI-controlled driverless cars are not yet on the market, many automakers and technology companies are working feverishly to develop them, with some approved testing on public roads. There are currently certain self-driving features in place, such as assisted parking and lane guidance. Due to their ability to reduce the need for driver recruiting, let a single perpetrator carry out many attacks, and even coordinate a large number of vehicles at once, autonomous vehicles have the potential to allow vehicular terrorism to grow. Driverless attacks will have a higher barrier to entry than they do now, requiring technological competence and organisation. This is because autonomous automobiles are almost guaranteed to have sophisticated safety systems, which would need to be overcome. However, given the intent behind such acts of terror,

delegates assessed these attacks as moderately profitable, highly feasible, and significantly harmful. Nonetheless, since autonomous vehicles are expected to be susceptible to conventional countermeasures (such as barriers and traffic restrictions), they received a lower Defeat ability score, indicating that they are comparatively easier to neutralize than human-driven vehicles (Dávideková and Greguš, 2017).

Customised phishing

Phishing attacks pose a significant cybersecurity threat, exploiting human vulnerabilities to obtain sensitive information (Chinnasamy et al., 2024; Basit et al., 2020). AI techniques are being employed to both enhance and combat these attacks. AI can amplify social engineering attacks through realistic content creation, advanced targeting, and automated attack infrastructure (Schmitt and Flechais, 2023). Conversely, AI-enabled detection systems utilize machine learning and natural language processing to analyze various characteristics of digital communications, offering more reliable and effective protection against phishing attempts (Chinnasamy et al., 2024; Dhake et al., 2023). Research has focused on comparing different AI techniques for phishing detection, including machine learning, deep learning, and hybrid approaches (Basit et al., 2020; Dhake et al., 2023). While AI presents promising solutions for phishing prevention, it also introduces new challenges and complexities in the cybersecurity landscape, necessitating ongoing research and development of countermeasures (Schmitt and Flechais, 2023; Basit et al., 2020).

Upending AI-driven systems

The increasing integration of AI into critical infrastructure and smart cities presents significant cybersecurity challenges. AI systems, often designed for efficiency rather than robustness, are vulnerable to adversarial attacks and data manipulation, which can exploit system vulnerabilities and lead to disruptions like traffic jams, supply chain failures, and power outages (Tyukin et al., 2020; Bertino et al., 2021; Malatji, 2023). Public safety systems are particularly at risk, as attackers may target their critical roles. Although these attacks often require deep system knowledge or access, their potential harm and profit make them

a significant threat (Falco et al., 2018). To mitigate risks, researchers propose developing automated tools to assess vulnerabilities and strengthen cybersecurity in AI-driven systems (Falco et al., 2018; Malatji, 2023).

Extensive blackmail

Conventional blackmail entails coercion through the fear of disclosing private information or proof of illegal activity. The collection of such evidence is a constraint on traditional blackmail, since the crime is only profitable if the victim is willing to pay more to suppress the evidence than it costs to acquire. AI can be used to do this on a much larger scale by gathering data from social media or large personal datasets, such as email logs, browser histories, hard drives, or phone contents, which need not be damning evidence in and of itself (King et al., 2019). It can then be used to identify specific vulnerabilities for a large number of potential targets and customise threat messages for each. AI has the potential to provide fraudulent evidence, such as when data is uncovered that suggests a vulnerability but lacks *prima facie* evidence.

Fake news

Fake news created by AI Propaganda that pretends to be credible by coming from a reliable source is known as fake news. When fake news is spread sufficiently, it can divert attention from accurate information in addition to spreading misleading information. The idea that AI could produce fake news information in order to increase efficiency, presence, or specificity was discussed by the delegates. AI might be used to create numerous variations of a specific piece of content, seemingly from various sources, to increase its visibility and credibility. It could also be used to select content or how it is presented to increase impact (Dalkir, 2021).

Explosion of markets

It was discussed how manipulating the financial or stock markets through targeted, most likely high frequency trading patterns can harm rivals, currencies, or the economy overall rather than just profiting

directly from the trading, though it could potentially be a side effect. The concept is an AI enhanced version of the fictional Kholstomer cold war conspiracy, which envisioned a Russian attempt to cause a financial collapse by abruptly dumping massive US dollar holdings through front firms (Mizuta, 2020). It was hypothesised that using reinforcement learning in conjunction with Natural Language Processing (NLP)-based media analysis and fake content creation could lead to the discovery of effective trading methods. Because it is extremely difficult to precisely simulate market conduct and it is very expensive to start large-scale trading, achievability was rated low, but prospective profits and damages were rated high.

AI-enabled stalking

The application of learning algorithms allows authorities or private entities to track a person's whereabouts and activities using data from personal devices or social media platforms. This practice is also considered to involve various crimes such as gaslighting, domestic violence, and coercive control in relationships. Furthermore, it has been linked to recent news reports about Western tech corporations' involvement in distributing apps that enforce social norms in oppressive countries (Rubel, 2016).

Forgery

The false creation of counterfeit media, including music and artwork, is increasingly being marketed with fraudulent claims of authorship. Among all the AI-related threats considered, this issue was assessed as the least concerning in terms of both its potential impact and likelihood of success. At present, artificial intelligence remains significantly limited in this domain. Although significant progress has been made in generating digital images that approximate the visual style of famous painters, this capability is entirely different from producing tangible works that could pass scrutiny in professional art galleries or auction houses (Hertzmann, 2018). The art world has long faced threats and has put in place a wide range of defensive measures, albeit not always enough. Most of those challenges are not even attempted to be addressed by AI.

X. Criminal Liability Framework for Artificial Intelligence

The complex and dynamic picture that arises from the junction of criminal culpability with artificial intelligence in India necessitates careful study from engineers, politicians, and legal professionals. As AI develops, its application to illicit activities presents serious legal ramifications and obstacles that call for flexible and proactive solutions. When AI systems are held criminally liable, it calls into question human actors' moral obligations, accountability, and intentions. AI lacks legal personhood, which makes things even more complicated and calls for a close analysis of the roles and obligations of AI developers, operators, and users in AI-driven criminal conduct. India's difficulties in linking artificial intelligence to criminal responsibility necessitate a multifaceted strategy that takes into account ethical, legal, and technological issues (Skowrońska, 2023). The autonomous nature of AI algorithms presents challenges for the legal system, which must come up with creative solutions to prove intent and liability in AI-driven crimes. To stop the deliberate misuse of AI technology for illegal activities, ethical frameworks that place a high priority on openness, justice, and accountability in AI development and application are crucial. Furthermore, worries about data privacy and security highlight the necessity of strong data protection legislation and cyber security protocols to guard against criminal activity powered by artificial intelligence that involves data manipulation and exploitation. It is imperative to modify the legal framework to account for offences related to artificial intelligence in order to maintain the applicability and efficacy of current laws in tackling the intricacies of such crimes. Furthermore, as AI's potential for involvement in criminal activity continues to develop, the legal system must continue to be flexible and sensitive to the quick advances in technology (Saud, 2024).

India needs to find a careful balance between encouraging innovation and upholding strict regulations when tackling artificial intelligence's role in criminal responsibility. Encouraging ethical principles and appropriate AI development processes will be essential to maximising the advantages of AI technology while reducing its illicit usage. To properly handle the issues posed by artificial intelligence's involvement in illegal

acts, stakeholders — including legal experts, AI developers, legislators, and civil society — must cooperate and collaborate. The transnational aspect of AI-driven crimes will require international collaborations and information exchange to be effectively addressed, enabling a worldwide response to this developing problem. The reduction of biases in AI algorithms utilised in law enforcement, predictive policing, and sentencing is a necessary step towards guaranteeing the fairness and integrity of the criminal justice system (Sayyed, 2024). The authenticity and dependability of AI-driven evidence presented in court is contingent upon the transparency and explainability of AI systems, which in turn upholds the legitimacy of judicial matters.

X.1. Global Approaches and International Perspectives on Criminal Culpability for Artificial Intelligence

The complicated and dynamic relationship between artificial intelligence technology and legal systems is reflected in the wide range of international approaches to AI criminal liability found in many jurisdictions. As AI develops and permeates many facets of society, including criminal activity, nations must grapple with the issue of assigning criminal liability to conduct motivated by AI. This passage examines the main international perspectives on artificial intelligence criminal liability, taking a close look at the various legal systems, moral dilemmas, and developing patterns around the globe. The autonomy of AI is one of the main obstacles to addressing its criminal responsibility on a global scale (Saad, 2024). The notion of strict liability for artificial intelligence systems has been advanced within the European Union — an integration association that unites multiple sovereign Member States under a common legal and regulatory framework. This means that the developer or operator may be held accountable for actions taken by AI systems, regardless of whether they were motivated by malice or had knowledge of the wrongdoing. In order to stop AI-driven criminal activity, this strategy places a high priority on the accountability of human actors using AI. It also emphasises the necessity of responsible AI development and deployment procedures. On the other hand, other jurisdictions — such as the United States — adopt a “causation-based”

strategy, in which criminal responsibility is placed on human actors who actively influenced the AI to conduct the crime. In these situations, it is the prosecution's responsibility to show a connection between the unlawful behaviour of the AI and the conduct of the human. This strategy necessitates a thorough assessment of the degree of human control over the AI system.

AI systems' legal personality is a further facet of global approaches to criminal culpability for artificial intelligence. While some nations, such as Saudi Arabia and Japan, have thought about giving artificial intelligence systems legal personality, most jurisdictions do not do so. Legal accountability is generally ascribed to human entities that are engaged in the creation, implementation, or utilisation of artificial intelligence technology. This approach reflects the belief that, since AI is a tool or technology created and operated by humans, it is ultimately humans who should bear responsibility for its actions. International perspectives on criminal liability for artificial intelligence heavily consider ethical factors (Skowrońska, 2023). Ethics principles that prioritise accountability, openness, and fairness have been recommended for the development of artificial intelligence by the European Union and Germany.

By ensuring that artificial intelligence systems are created and implemented ethically, these principles hope to lower the possibility that AI may be exploited for illicit activities. In order to avoid biased results, ethical frameworks also concentrate on eliminating biases in AI algorithms, especially in criminal justice applications. International attempts to address AI criminal liability include encouraging transparency and explainability in AI systems in addition to ethical issues. In light of the high stakes involved in applications such as autonomous vehicles and medical diagnosis systems, a number of countries have proposed rules requiring developers and operators to maintain transparent documentation and audit trails of artificial intelligence algorithms. The focus on transparency seeks to improve public confidence in AI systems and facilitates more accurate evaluation of the AI's decision-making procedures in criminal cases.

Other crucial elements of foreign approaches to criminal responsibility for AI include data privacy and security. To prevent AI systems

from misusing or gaining unauthorised access to people's personal information, numerous nations have passed data protection legislation. These regulations are meant to lessen the possibility that AI will be used by hackers to obtain and abuse private information for illicit gain. Ensuring strong cyber security protocols is crucial in averting data breaches that may jeopardise the confidentiality and safety of individuals and entities. Cross-border cooperation and information sharing are growing trends in international approaches to criminal responsibility for artificial intelligence. Effective response to AI-driven crimes, which often transcend borders, demands close international collaboration. Treaties on mutual legal assistance and intergovernmental frameworks are essential for facilitating the exchange of intelligence, evidence, and technical expertise related to such offences (Khisamova and Begishev, 2019). This facilitates a more thorough and well-coordinated response to transnational offences driven by AI. Furthermore, global alliances and organisations like the G7 and the UN have expressed interest in regulating and establishing criminal culpability for AI. These platforms facilitate the exchange of best practices, address global challenges related to AI, and contribute to the development of international norms and standards on ethics, justice, and accountability.

X.2. Proposed Legal Measures to Impose Criminal Liability on AI

The legal measures that are being proposed in India to impose criminal liability on artificial intelligence aim to tackle the distinct difficulties that arise from the incorporation of AI technology into several domains, including illicit activity. It is essential to provide a clear legal framework that holds responsible the important human actors engaged in the creation, implementation, and usage of artificial intelligence systems accountable as AI develops and becomes more independent. One suggested solution is to highlight the strict responsibility concept, which states that, regardless of purpose or knowledge of the unlawful conduct, AI developers and operators may be criminally accountable for activities driven by AI. This method places emphasis on the need for people to ensure that artificial intelligence algorithms are created

and used responsibly to prevent intentional misuse. This policy seeks to encourage ethical AI development practices and increase accountability and transparency in India's AI industry by placing stringent obligation on developers and operators. Furthermore, the establishment of precise rules for explainability and transparency in artificial intelligence systems may be the main goal of suggested regulatory measures for AI criminal liability in India. In particular, when it comes to situations involving criminal activity, the legal system can gain a better understanding of the decision-making processes of artificial intelligence by compelling developers and operators to furnish comprehensive documentation and audit trails of their algorithms (Sayyed, 2024). This approach guarantees the transparency of the procedures and reasoning behind artificial intelligence acts, allowing legal professionals to evaluate the degree of human involvement and accountability in AI-driven offences. Transparency measures provide fairness and help to the public's growing trust in AI systems while attributing criminal liability.

Additionally, the planned legal measures for artificial intelligence criminal liability in India depend heavily on the execution of comprehensive data protection laws. These rules are intended to protect people's private information from being misused or accessed by unauthorised AI systems. India can reduce the likelihood that criminals will utilise AI to obtain and misuse sensitive data for illicit activities by placing a high priority on data privacy and security. Increasing the effectiveness of cyber security measures is also essential for preventing data breaches that can jeopardise people's and organisations' privacy and security, which lowers the likelihood that AI will be involved in illegal actions involving the manipulation and exploitation of data. Guidelines for ethical AI development methods may be included in suggested regulatory measures to address ethical issues with AI criminal liability. This action highlights the need to develop and apply AI technology in a way that respects moral standards and societal norms in order to lessen the possibility of AI-driven criminal activity (Mou and Yang, 2023). The legal system may make sure that AI technologies are made to minimise biases and promote fair and equitable outcomes — especially in applications related to criminal justice — by supporting ethical frameworks for AI. Developing new offences related to artificial

intelligence and amending current legislation to include offences motivated by AI are further potential regulatory initiatives. It is imperative that the legal structure be modified in order to effectively manage emergent AI-related offences, given the speed at which artificial intelligence is developing and its potential to introduce fresh illegal activity (Dremluga and Prisekina, 2020). This measure guarantees that crimes fuelled by artificial intelligence are sufficiently addressed and allows the legal system to keep up with technological progress.

X.3. Contemporary Issues in Artificial Intelligence and Law

There is quite a number of significant legal and AI challenges that require attention. One major concern is the potential for bias in algorithmic decision-making, particularly when AI systems are used in critical areas such as criminal sentencing. These systems may inadvertently perpetuate biases present in the data, raising questions about fairness and equality (Law Commission of Ontario, 2021). Additionally, the opacity of AI models often makes their decision-making processes difficult to interpret, prompting calls for greater transparency and automated justifications for their outcomes (Zerilli et al., 2019).

Another pressing issue is the risk of over-reliance on AI in government operations. Automated decisions may appear objective and accurate, yet they carry limitations and uncertainties that can be overlooked. For instance, reports predicting recidivism risks might convey a false sense of precision, potentially leading judges to place undue confidence in AI-generated data (Liu et al., 2019). The case of *State v. Loomis* exemplifies the risks of algorithmic governance, including threats to due process and transparency (Liu et al., 2019).

Addressing these challenges requires regulatory frameworks that promote fairness, safeguard rights, and encourage public engagement. Policymakers must also balance the benefits of AI-driven efficiency with the need for accountability and ethical oversight (Law Commission of Ontario, 2021).

XI. Future of Artificial Intelligence and Law

Artificial intelligence is poised to revolutionize the legal profession, transforming how services are delivered and challenging traditional models (Davis, 2020; Burt, 2021). From a macroscopic perspective, AI technologies are driving structural transformations in the legal sector. Historically reliant on human resources, legal services have often been costly and inefficient, limiting accessibility for small and medium-sized businesses as well as individuals. The development of AI offers opportunities to address these inefficiencies by standardizing legal processes and reducing reliance on legal professionals in routine tasks (Davis, 2020; Alarie et al., 2018). For example, automated systems like those used in New York City for resolving parking violations have significantly reduced the need for human intervention (Atrey, 2023).

AI's integration in high-level applications could also create new paradigms for collaboration between humans and machines. Tasks such as case management, legal research, and drafting legal documents are increasingly supported by AI, enhancing productivity and allowing lawyers to focus on more complex, judgment-intensive work (Alarie et al., 2018). However, in areas with ambiguous or conflicting regulations, AI remains a tool for assistance rather than full replacement, as nuanced analysis and value trade-offs require human expertise.

On a microscopic level, AI is impacting specific fields within the legal profession, such as judicial work and legal practice. AI tools are being utilized for case management, sentencing references, evidence review, and automated document generation, streamlining many judicial tasks. However, the necessity for human oversight in judgment and interaction with clients limits AI's reach in certain areas. For legal workers, particularly lawyers, AI-driven tools are becoming essential for tasks like e-discovery and litigation analysis, although the technology is far from fully autonomous in handling complex legal issues (Davis, 2020).

Despite these advancements, challenges remain. The potential for bias in algorithmic decision-making raises concerns about fairness, as AI systems may inadvertently reinforce existing inequalities present in the data (Law Commission of Ontario, 2021). Transparency and

interpretability are also significant issues, with critics calling for AI systems to provide comprehensible justifications for their decisions (Zerilli et al., 2019). Over-reliance on AI tools risks creating a false sense of objectivity, as seen in the case of *State v. Loomis*, where algorithmic predictions influenced sentencing decisions without adequate consideration of the model's limitations (Liu et al., 2019).

To ensure AI's successful integration into the legal sector, policymakers, legal professionals, and the public must collaborate to develop ethical and regulatory frameworks. These frameworks should balance AI's potential to improve efficiency and accessibility with the need to address its risks and limitations. With strategic implementation, AI can transform the legal profession, making legal services more transparent, efficient, and accessible for all (Davis, 2020; Alarie et al., 2018; Burt, 2021).

XII. Concluding Remarks

The study of information technology and law is inherently contradictory because, whereas technology embraces concepts like internationalisation and globalisation, the majority of the law is still somewhat bound by national borders. With the rapid digitalization of society, a serious threat is looming to the concept of rule of law. In recent decades, the idea of artificial intelligence has advanced significantly across numerous industries. Even though it has received a lot of negative press in films, the globe is essentially heading in the direction of its success. AI-based automated computer-controlled procedures are used in many different industries, though it is a fact that computers will never be able to think or perform as well as humans can. However, one useful aspect of adopting technology in various businesses is that it can cut down on computation and task completion times by occasionally utilising artificial intelligence. There is a dearth of appropriate laws in this area when it comes to AI-related legislation. While machines cannot bear criminal liability in the event of accidents causing physical harm or death, the sanctity and value of human life demand that clear accountability mechanisms be established. The appropriate solution lies in adopting a human-centric liability model wherein developers,

operators, manufacturers, and deployers of AI systems are held responsible under a framework of strict and vicarious liability.

Therefore, a proper effective legislation is needed to balance the intersection of human being and *machina sapiens* in the upcoming time. It is the responsibility of jurists to continuously monitor scientific and technological developments and, by their contributions, to include such achievements in laws. Such topics ought to be discussed in public by world leaders and in international parliaments.

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