



Smart Robots and the Future of Justice: A Prospective Legal Study on the Challenges Facing the Legal Profession

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Abstract:

Humanity is experiencing unprecedented advancements driven by the scientific and digital revolutions, with artificial intelligence (AI) emerging at the forefront as a hallmark of accelerated technological progress. AI has rapidly integrated into nearly every sector, including the justice system. This paper investigates the implications of AI algorithms on judicial processes, particularly in light of the substantial legal ambiguities and regulatory gaps surrounding these technologies, which are capable of executing complex tasks in seconds. It further analyzes the ethical and professional dilemmas posed by AI for legal professionals — the so-called "wearers of the black robe" — and underscores the urgent need for the justice sector to adapt to digital transformation in harmony with ongoing scientific and technological developments. Particular emphasis is placed on the ethical and professional challenges confronting the Algerian judiciary within this rapidly evolving landscape. **Keywords:** Type your keywords here, separated by semicolons ;

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The justice sector is one of the most vital pillars upon which any modern and sovereign state is built. It serves as the foundation for establishing and consolidating principles of fairness, security, tranquility, and stability. Like other sectors, the justice system today faces a wave of emerging challenges driven by the ongoing scientific and technological revolution — particularly the rise of artificial intelligence (AI), which has become an inevitable necessity in this domain. The sector suffers from a lack of legal and regulatory frameworks capable of guiding the strategic and effective integration of AI systems, especially within the legal profession. This necessity is underscored by the absence of sufficient legislative instruments to address the potential risks and threats posed by AI in judicial functions.

This paper highlights the growing importance of keeping pace with the technological advancements that have rapidly unfolded in recent years, particularly with the emergence of intelligent robots and their introduction into the justice sector — notably in the field of legal advocacy. Hence, the following research question arises:

To what extent have AI algorithms contributed to the development of the justice system and the legal profession, transforming them from their traditional form to a digital framework?

To address this question, this study adopts both descriptive and analytical methodologies, and is structured as follows:

- **Section One:** The Concept and Nature of Artificial Intelligence
- **Section Two:** The Use of Artificial Intelligence in the Judicial System and the Legal Profession

Section One: The Concept and Nature of Artificial Intelligence

The origins of Artificial Intelligence (AI) date back to 1950, when the English computer scientist **Alan Turing** proposed a test initially referred to as the "**Imitation Game**", which later became known as the "**Turing Test**". This test was designed to assess a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human being. His famous question — "*Can machines think?*" — was the focal point of his influential paper entitled "**Computing Machinery and Intelligence**". Through a pragmatic approach, Turing reached a significant conclusion: machines with human-like intelligence may indeed be capable of thinking.

In 1956, the term **Artificial Intelligence** was formally coined during the **Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI)**, led by computer scientists **John McCarthy** and **Marvin Minsky** at Dartmouth College in New Hampshire. The project's main objective was to bring together researchers from various disciplines to advance the development of intelligent machines capable of simulating human cognitive processes. This event marked the true beginning of the AI era and is considered a foundational milestone that united many of the prominent thinkers of that period — later referred to as the **founding fathers of AI**.

In this section, we begin by examining the various definitions that contribute to our understanding of AI, alongside its key characteristics. We will then explore the nature of AI itself — a subject that continues to generate significant academic debate (*Yasmine, p. 34*).

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Subsection One: The Concept of Artificial Intelligence

The term *Artificial Intelligence* has become increasingly widespread in recent years, to the point where some people fear it may signal the domination of machines and the diminishing role of human beings. However, this perception is far removed from reality. Such concerns highlight the need to examine the definition of Artificial Intelligence (First Branch), followed by a discussion of its key characteristics (Second Branch).

Branch One: The Definition of Artificial Intelligence

In this section, we address the definition of Artificial Intelligence from a technical perspective. We then explain its linguistic meaning as found in Arabic and foreign dictionaries, and finally, we present key legal and academic definitions as proposed by various scholars, as follows:

1. Technical Definition of Artificial Intelligence

From a technical standpoint, Artificial Intelligence is defined as:

“A computer-programmed machine that uses specific algorithms and procedures to perform a particular task or function. The system receives input automatically and applies it according to the program’s instructions.”

(Boden, 2025)

Artificial Intelligence also refers to the use of computers or robots controlled by intelligent software to carry out complex and precise tasks. These systems rely on multiple layers of information, including algorithms, pattern recognition, rules, deep learning, and cognitive computing, in order to learn how to understand and interpret data.

(Mohamed Jibril, 2025)

2. Linguistic Definition of Artificial Intelligence

We now turn to the definition of Artificial Intelligence as found in Arabic and foreign dictionaries:

- **In Arabic Dictionaries:**

AI is described as: “The capacity of a machine or device to perform certain activities that require intelligence, such as logical reasoning and self-correction.”

(Ahmed Mokhtar, 2008)

- **In Foreign Dictionaries:**

According to the *Petit Robert* dictionary, Artificial Intelligence is: “That part of computer science devoted to simulating cognitive abilities to replace humans in performing context-specific intelligent functions.” (Karim, 2022)

2. Definition of Artificial Intelligence in Foreign Dictionaries

Most modern foreign dictionaries define Artificial Intelligence as a subfield of computer science focused on how machines can replicate or simulate human intelligence.

- The **Merriam-Webster Dictionary** defines Artificial Intelligence as:

"A branch of computer science dealing with the simulation of intelligent behavior in computers, or the capability of a machine to imitate intelligent human behavior."

- The **Oxford English Living Dictionary** defines AI as:

"The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages."

- According to the **Encyclopedia Britannica**, AI is defined as:

"The ability of a digital computer or a computer-controlled robot to perform tasks commonly associated with intelligent beings." (Ibrahim, p. 20)

These definitions collectively demonstrate that AI encompasses a wide range of applications across various fields, such as medical diagnostics and speech recognition. This versatility highlights the extent to which AI mimics human intelligence.

3. Definition of Artificial Intelligence in Legal and Academic Scholarship

Despite the growing academic interest in Artificial Intelligence, there remains no universally agreed-upon definition of what AI precisely entails. Legal and academic scholars have proposed various definitions in an effort to capture the essence and nature of AI. These definitions often conceptualize AI as a research field, as independent systems, by comparison to human intelligence, or through descriptions of AI techniques and applications.

Before exploring these definitions, it is useful to break down the term itself:

- "**Artificial**" refers to something that is man-made or not naturally occurring.
- "**Intelligence**" refers to the capacity for understanding, reasoning, and problem-solving.

The American scientist **John McCarthy**, often regarded as the *father of Artificial Intelligence*, defined AI as: "*The science and engineering of making intelligent machines, especially intelligent computer programs.*" (Ben Lachheb, 2022)

Still within the academic context, **Professor Jihad Afifi** defines Artificial Intelligence as: "*A set of behaviors and characteristics exhibited by computer programs that allow them to simulate human mental abilities and patterns of functioning. Among the most important of these characteristics are the abilities to learn, reason, and respond to situations not previously programmed into the machine. AI belongs to the modern generation of computing systems and aims to replicate the processes of intelligence that occur within the human mind.*" (Betchim, 2022)

Based on the technical, linguistic, and scholarly definitions discussed above, we can derive a simplified, yet comprehensive definition of Artificial Intelligence:

Artificial Intelligence is an attempt to replicate human intelligence and thought processes, particularly in terms of learning, transferring learned knowledge across contexts, and making informed decisions in diverse situations.

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Branch Two: Characteristics of Artificial Intelligence

Artificial Intelligence is distinguished by a number of key characteristics and features, among which the following are particularly noteworthy:

1. Predictive and Adaptive Capabilities

AI systems utilize algorithms and programmed data to make decisions and predict future outcomes. Through these algorithms, AI learns how to solve problems and make decisions based on the data it processes. One practical example of AI's predictive and adaptive abilities is found in **utilitarian software systems**, such as spell-check tools in word processors or the personalized recommendation algorithms used by **search engines like Google**.

(Ibrahim, p. 37)

2. Full Autonomy in Decision-Making Without Human Intervention

Perhaps the most prominent feature that sets AI apart from earlier technologies is its **ability to operate independently** and perform complex tasks — such as driving a car — without human control. In contrast to earlier mechanical systems that were merely reactive tools, today's AI technologies are **autonomous and intelligent**. This autonomy is evolving rapidly, moving from semi-autonomous systems to fully autonomous ones. A system cannot truly be considered intelligent unless it can generate multiple options and make decisions by selecting among them. *(Al-Fatlawi, 2022)*

3. Ability to Simulate Human Behavior

Artificial Intelligence has the ability to **simulate human behavior**, which is a key aspect of its design. The primary goal behind developing AI is to utilize data processing capabilities to better understand human intelligence — particularly in areas such as language comprehension and human behavioral patterns — since human cognition is the original source of the intelligence that machines are designed to replicate. *(Karim, p. 25)*

4. Capable of Motion and Perception

With the rise of **Big Data** and the exponential growth of the information society, Artificial Intelligence has undergone a profound transformation since its conceptualization by **John McCarthy** in 1956. One of the most visible advancements is AI's ability to develop advanced **cognitive capacities**, including **visual perception, speech recognition, auditory processing, information analysis, and learning**.

These capabilities are already evident in numerous AI-enabled technologies, such as **autonomous vehicles, drones, web-based information retrieval tools, audiobook readers, and mathematical computation systems**. Naturally, the more AI systems advance in their motion and perception capabilities, the more seamlessly they can be integrated into our everyday lives. *(Ibrahim, p. 40)*

5. Cloud Computing

One of the core characteristics of AI is its **reliance on cloud computing**. Given the massive volume of data produced daily, storing such information in physical form presents significant challenges. AI's capacity to operate within cloud computing environments allows organizations to be more **efficient and strategic**.

A prominent example is **Microsoft Azure**, a leading platform in the cloud computing industry, which enables the deployment of **machine learning models** directly on cloud-stored data, significantly enhancing data processing and AI functionality. (*Ibrahim, p. 42*)

Subsection Two: The Legal Nature of Artificial Intelligence

Given the increasing integration of Artificial Intelligence across numerous sectors — particularly due to its value in **facilitating legal work, reducing workload, saving time, and exercising decision-making autonomy** — many countries have recognized the necessity of adopting AI in their judicial and administrative systems. However, this practical importance raises a critical legal question: **What is the legal nature of AI?** Can it be recognized as possessing **legal personality**?

This issue is far from straightforward, as **legal personality** traditionally applies either to **natural persons (human beings)** or to **legal entities** (public or private institutions). This has led to considerable **academic debate** over whether AI should be granted legal personality, dividing scholars into **supporters and opponents**, each offering distinct justifications and theoretical foundations for their stance.

Branch One: The Opposing View — Rejection of Legal Personality for Artificial Intelligence

According to proponents of this view, it is **premature** to discuss granting legal personality to robots and AI systems. These technologies have **not yet reached** a sufficient level of development and autonomy that would allow for precise attribution of their actions, or enable them to bear legal responsibility independently of their human users. AI programs currently **lack self-awareness, consciousness, and free will**, in addition to lacking the capacity for **legal standing and independent financial liability**. They still require human intervention in the event of technical failures, meaning that the **human user remains fully liable** for any financial or legal consequences arising from their actions. (*Belbai, 2022*)

In this same context, several legal scholars — particularly in **European and American** jurisdictions — have explicitly rejected the idea of granting legal personality to intelligent robots. For instance, the **European Robotics Initiative** opposed recognizing robots as legal entities with a legal status comparable to that of natural persons. Similarly, French scholars **G. Loiseau** and **M. Bourgeois** warned of the **risks** of such recognition, which could result in **producers and users evading liability** and being less motivated to ensure the safety and ethical design of smart robots. Under such a system, responsibility would shift from humans to the machines themselves, which raises serious concerns. (*Drebal, 2022*)

From this perspective, granting legal personality to robots may eventually lead to the emergence of a **non-human, electronic society**, which may not be subject to **human legal authority**, especially if these entities are permitted to act completely independently of human control. The rise of such a society — powered by what is often referred to as "**superintelligent AI**" — could have catastrophic consequences for society at large and for the future of humanity itself. Many AI developers and companies are, in fact, working toward achieving this level of superintelligence.

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Branch Two: The Supporting View — Recognition of Legal Personality for Artificial Intelligence

Proponents of this view argue that the **accelerated evolution of AI** may ultimately lead to the development of AI entities capable of **conscious awareness, sensory perception, and autonomous decision-making**, independent of human oversight. Consequently, they argue, AI systems should be **held criminally responsible** for their actions and decisions, especially as their cognitive performance increasingly exceeds that of human beings. This would necessitate granting AI legal personality and holding it accountable under criminal law when it commits a criminal act.

Critics who oppose this idea often claim that robots **lack emotional faculties** such as love, jealousy, hatred, or anger. However, supporters of legal personality argue that **these emotions are not essential elements** in establishing criminal responsibility. (*Idlibi, p. 64*)

Even if emotional faculties are relevant in certain criminal offenses, they are not universally applicable across all crime types and **do not justify exempting robots from legal accountability**. This concept has already been implemented in practice in **Nevada, USA**, where robots are **registered in a special database** and granted **financial liability** through mandatory insurance mechanisms to cover potential damages. This classification has made them **eligible defendants in civil liability claims**. (*Saqr, p. 97*)

This legal recognition aligns with resolutions adopted by the **European Parliament**, which support the idea that **autonomous robots** should be held responsible for compensating all damages they cause to third parties. (*Al-Maadawi, p. 306*)

Branch Three: Granting Robots Electronic Legal Personality — The Bundle Theory

A group of legal scholars has proposed what is known as the **Bundle Theory of Legal Personhood**. This theory suggests the creation of a **third category of legal personality**, situated between **natural** and **juridical (legal)** persons. According to this view, AI-powered machines or software systems would be assigned a **“bundle” of rights and obligations** that reflect their specific nature as intelligent, automated entities.

In other words, AI entities would be granted **a limited set of rights and responsibilities**, carefully tailored to their operational capabilities and functions. This would include select attributes of both natural and juridical persons, adjusted to suit the unique character of AI systems. The objective of this theory is to establish a new legal status known as **“electronic personality” (personnalité électronique)**.

Such a status would enable AI systems or robots to **own assets, generate income, pay taxes, and engage in legal proceedings** — a proposal that aims to reconcile the growing autonomy of AI with existing legal frameworks. (*Ibrahim, p. 135*)

Section Two: The Use of Artificial Intelligence in the Justice System and the Legal Profession

Artificial Intelligence did not emerge suddenly or in isolation; rather, its **integration into the legal field** — particularly by lawyers and within legal practice — has been underway for some time, albeit relatively recently in historical terms. This evolution raises

fundamental questions regarding the **impact of modern technologies** on the justice sector in general, and the legal profession in particular.

This section explores these issues through two main subsections.

Subsection One: Artificial Intelligence and the Concept of Justice in Judicial Systems

The world is currently undergoing a **digital revolution**, largely driven by Artificial Intelligence (AI), which is now making inroads into a wide array of sectors — including the judiciary. While AI offers **enormous potential to accelerate legal procedures and improve institutional efficiency**, it simultaneously raises important **ethical and legal concerns** regarding its compatibility with **the principles of justice and fairness**.

Subsection One: Advantages and Disadvantages of Artificial Intelligence in the Justice Sector

1. Advantages of Artificial Intelligence in the Justice Sector

- **Creation of a New Judicial Ecosystem:**
AI has the potential to create a **new judicial framework**, which has already begun to be implemented — even on an experimental basis — in several countries. These applications range from enhancing court administration to **predictive justice** and **law enforcement**.
- **Enhanced Efficiency and Performance:**
AI contributes to increased efficiency by **automating routine legal tasks**, such as document analysis, legal research, and adjudication of minor offenses. This allows **judges and lawyers** to focus on more complex and substantive matters. (*Okba, 2025*)
- **Acceleration of Judicial Procedures:**
AI can analyze **thousands of legal documents within seconds**, dramatically accelerating litigation processes and reducing case backlogs, especially in systems burdened by excessive filings and delays.
- **Reduction of Human Bias:**
When **neutrally designed**, AI algorithms can help mitigate **racial, class-based, or other biases** that may unconsciously influence judicial decisions.
- **Fair and Flexible Justice System Organization:**
AI holds potential to improve various dimensions of the **criminal justice system**, including **crime reporting, policing, bail determinations, sentencing, and parole** decisions — provided it is designed to minimize bias and inaccuracies resulting from flawed or incomplete datasets. (*Jebaïli, 2022*)

2. Disadvantages of Artificial Intelligence in the Justice Sector

- **Lack of Transparency:**
Many AI systems operate as “**black boxes**”, making it difficult to understand the rationale behind their decisions. This lack of transparency challenges the right to **due**

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process and hinders the ability to **appeal** or **review decisions** rendered by AI systems.

- **Privacy and Cybersecurity Risks:**

AI in justice often requires the collection and processing of **large volumes of personal data**, including **sensitive information**. This raises serious **privacy concerns** and increases **cybersecurity risks**, particularly when dealing with inaccurate data or autonomous AI entities beyond human oversight. These risks open the door to the possibility of **manipulation or criminal use** of AI systems — for example, smart robots committing crimes against humans. (Okba, 2025)

- **Accountability Challenges:**

A critical issue concerns **who is legally responsible** when an AI system issues a wrongful decision that harms one of the parties. Should liability fall on the **developer**, the **company**, or the **user**? Given the current **legislative vacuum**, legal accountability in such cases remains highly **complex and unresolved**.

- **Undermining Human Legal Roles and Skills:**

Excessive reliance on AI may lead to the **erosion of judicial and legal advisory roles**, weakening **human analytical and reasoning capabilities**. This poses a serious threat to justice professionals, as **misleading outputs** from AI systems could undermine legal accuracy, **erode public trust**, and **distort the very essence of justice**.

Subsection Two: Algorithmic Applications in the Field of Justice

In light of the rapid advancements in artificial intelligence technologies and data analytics, algorithms have begun to play an increasingly significant role in various sectors — including the **judicial system**. Among the most prominent **applications of AI algorithms in the legal field** are the following:

1. Electronic Authentication and Digital Signatures under Law 15/03

The **Algerian legislator** addressed the **electronic signature and authentication system** in Section Two of **Law No. 15/03**, related to the modernization of the justice sector. The law allows for the issuance of documents bearing an **electronic signature** by the Ministry of Justice (Article 4). Furthermore, it introduced a **qualified electronic certificate** issued by the Ministry, serving as proof of the link between the signature verification data and the signature holder (Article 6).

Article 7 affirms that the Ministry of Justice ensures the authentication of electronic signatures through a **secure electronic system** that verifies the identity of the recipient, the signature's validity period, and the associated information. Additionally, the Ministry **assumes legal responsibility** for the certificates it issues — both towards the individuals whose signatures are authenticated and toward third parties (Article 8). (Law 15/03, 2015)

2. Electronic Transmission of Legal Documents and Procedures

Legal notifications, documents, pleadings, and other procedural instruments may be **transmitted electronically**, enjoying the **same legal validity and evidentiary force** as

original documents — provided they are prepared in accordance with procedural requirements.

The **technical means** used for the electronic transmission of legal instruments must satisfy the following conditions:

- Reliable **identification** of the parties involved in electronic communication
- Ensuring the **security and confidentiality** of the transmission
- **Preservation of data**, enabling precise identification of the **date of sending and receiving** by the intended recipient (*Jebaili, 2022*)

3. Use of Remote Video Communication in Judicial Proceedings

In response to the challenges posed by the **COVID-19 pandemic**, the Algerian legislator sought to ensure the **continuity of judicial services** by integrating **remote video communication technologies** into court procedures. Article 441 bis 7 of the **amended and supplemented Code of Criminal Procedure** (by Ordinance No. 20/04) states:

“Trial courts may resort to remote video conferencing either on their own initiative or at the request of the public prosecutor, the parties, or their legal counsel — for the purpose of interrogating, hearing testimony, or conducting confrontations.” (*Ordinance 20/04, 2020*)

On a practical level, the **first remote trial in Algeria** was conducted on **October 7, 2015**, at the **El-Kolea Court of First Instance** (Tipaza Judicial Council). The **El-Harrach Court** became the second court under the Algiers Judicial Council to adopt **remote video trials**.

This system enabled courts to **save time and resources** by facilitating the hearing of **incarcerated individuals** held in distant correctional facilities via video conferencing — for instance, using platforms such as **Skype**. (*Brahimi, 2022*)

Section Two: The Extent to Which the Right to Defense Is Enhanced by the Robot Lawyer
It is evident that both **law and the legal profession** have been significantly affected by the dominance of digitization across all sectors related to them. This transformation has compelled legal professionals — the “bearers of the black robe” — to adapt and align with the **new digital ecosystem**, shaped by evolving technologies and systems that demand a **fundamental shift** in the legal profession toward smart technologies.

Subsection One: Scope of Application of the Robot Lawyer Concept

The **legal profession has not been immune** to the digital revolution and its profound impact on the future of lawyering. This is clearly demonstrated by the growing number of **AI-driven applications** across various sectors, including the field of **law, justice, and specifically legal advocacy**.

A notable study titled “*The End of Lawyers? Rethinking the Nature of Legal Services*” (2010) focused on the **uniqueness of legal services** in a **digital data environment**, while addressing the future development of legal practice. This “end” does not imply the **literal demise of lawyering**, but rather the **end of the traditional model** of legal practice and a transition toward **digital and smart legal services**.

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According to the study's author, this idea **is not meant to exclude lawyers**, but rather to **empower them** to practice law differently — **more effectively, efficiently, and at lower cost**. Thus, **enhancing the technological skills of lawyers** has a positive impact on both the profession and the wider justice system. (Tairi, 2022)

When referring to the "**digital lawyer**", we are not merely describing legal practitioners who provide **online legal consultations**, but rather the "**robot lawyer**", capable of **appearing in court and arguing cases**.

For instance, the **multinational law firm Allen & Overy (A&O)** has launched a legal AI platform called **Hervey AI Chatbot**, a legal language model that provides **recommendations based on legal precedents**, and is capable of **contract analysis** and document review. (Abdel Aal, 2024)

Of particular significance is a case filed on **March 3, 2023**, in **California, USA**, marking the **first lawsuit against the use of a robot lawyer**. The case was brought before the **Superior Court of the State of California, County of San Francisco**, under the title:

Jonathan Freudian (Plaintiff) vs. DONOTPAY, INC. (Defendant)

The plaintiff, **Jonathan Freudian**, filed a **class action lawsuit** demanding a **jury trial**, seeking to **halt the activities** of what was claimed to be the "**world's first robot lawyer**," on the basis that it was engaging in **unauthorized legal practice**.

Nature of the Action:

1. The defendant, **Do Not Pay**, claims to be the **world's first robot lawyer**, offering assistance in various legal matters — from drafting powers of attorney and divorce settlement agreements to filing claims in small claims court.
2. However, the platform **is neither a lawyer nor a law firm**, **is not licensed in any jurisdiction**, **does not possess a law degree**, and **is not supervised by any legal professional**.
3. Instead, **Do Not Pay** is simply a **website** housing a **substandard document repository**, generating **basic legal documents** based on client-provided data — at best resembling **ad-lib legal templates**. (Abdel Aal, 2024)

Subsection Two: The Impact of Algorithms on Upholding the Principle of the Right to Defense

The increasing use of artificial intelligence (AI) in judicial procedures has triggered a wide-ranging debate regarding its impact on **fundamental guarantees of a fair trial**. While intelligent systems aim to **enhance judicial efficiency**, they may simultaneously pose a threat to **core principles of due process**, particularly the **right to defense**, especially in the **absence of a clear legal framework** regulating their use.

The **right of the accused to legal counsel** is a cornerstone of fair trial guarantees. The **International Covenant on Civil and Political Rights** affirms this right, stipulating that

the accused has the right to **choose a lawyer**, be **informed of this right**, and be **provided with legal aid when justice so requires**. Consequently, the accused has the **right to refuse interrogation** in the absence of legal counsel, and no interrogation may proceed unless the defense has been **lawfully summoned**, unless explicitly waived by the accused.

Some legal scholars argue that the **implementation of algorithms in the justice sector** may lead to a **reduction in the opportunities** for defense lawyers to present **procedural defenses**, thereby constituting a **violation of the right to defense**, one of the fundamental pillars of litigation. This gives rise to a critical research question:

How can algorithms summarize a legal claim and respond to legal arguments and defenses?

To answer this, algorithms typically begin by applying **Natural Language Processing (NLP)** techniques to analyze legal texts.

For example, suppose a plaintiff, Mr. A, files a lawsuit seeking **termination of a lease agreement dated 01/01/2020**, citing **non-payment of rent for six consecutive months**, and requests **termination, litigation expenses, and attorney's fees**.

- **Algorithm-generated summary:**
 - Claim type: Lease termination
 - Reason: Non-payment
 - Date: 01/01/2020
 - Requests: Termination + expenses + attorney's fees

The algorithm then analyzes potential legal defenses and generates **appropriate legal language**.

- **Sample defense generated by the algorithm:**

"The defendant argues that the claim is invalid, citing force majeure (e.g., the COVID-19 pandemic) as the reason for delayed performance. Furthermore, the plaintiff failed to issue a formal notice prior to filing the lawsuit."

Despite the **technical efficiencies** that AI systems offer in accessing and organizing legal information, their use in judicial systems — particularly in the field of legal advocacy — raises serious concerns regarding the **effectiveness of the right to defense**:

- **Opacity of algorithmic reasoning:**

AI systems often operate as a “**black box**,” with decision-making processes that are difficult to interpret — even by their developers. This lack of transparency prevents defense attorneys from understanding the rationale behind AI-generated judgments, undermining the principle of **adversarial proceedings** and rendering the **right to defense hollow**.
- **Limited mechanisms to challenge AI outcomes:**

Many legal systems **lack clear procedures** for appealing or reviewing decisions

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derived from AI outputs. This increases the risk of **entrenching erroneous rulings** without sufficient judicial oversight. (*Slim, 2025*)

Conclusion:

In light of the foregoing, algorithms can indeed serve as **powerful tools** for reinforcing the right to defense, provided they are employed within a **clear legal and ethical framework** — one that ensures **transparency, human oversight, and protection of fair trial guarantees**.

Artificial Intelligence (AI) constitutes a genuine revolution in the legal field. The use of robot-lawyers and algorithmic systems has proven effective in enhancing the performance of justice and delivering more advanced and efficient legal services. However, this transformation requires several supporting factors, including the availability of clear guidance, adequate technical infrastructure, and a focus on training programs dedicated to technological competencies. It is equally essential to ensure that the quality and reliability of legal services are not compromised, nor should the essence of justice and the guarantees of a fair trial be undermined.

Despite the initiatives undertaken by the Ministry of Justice, such as the creation of judicial portals and the digitization of many legal services, the concept of **digital justice** remains in development. In this model, litigants, lawyers, and parties are exempt from physical court appearances when filing claims or submitting briefs. In the legal profession, law offices must be electronically connected to all courts, councils, and public prosecutors' offices to access procedural and administrative services—such as e-signatures and online payments, including attorney stamp duties.

To this end, it is essential to establish a **professional network for lawyers**, similar to France's "RPVA" (Réseau Privé Virtuel des Avocats). In any case, despite the considerable efforts made, challenges persist, and all stakeholders must collaborate to ensure the success of this inevitable and historic digital transformation.

Study Findings :

- There is **no unified definition of artificial intelligence**, due to its diverse nature, systems, techniques, and fields of application. This has led to various perspectives on how to define and understand it.
- Some legal scholars have proposed a **third category of legal personality** to address the ambiguity surrounding the legal status of AI. Known as the "**Bundle Theory of Legal Personhood**," this concept grants AI systems a hybrid legal personality—part human, part legal entity—with a specific bundle of rights and obligations reflecting their technical and operational nature.
- The **digital transformation of the legal profession**, especially for lawyers, has become crucial in light of rapid technological advances impacting the legal sector.

- The current judicial system **lacks clear mechanisms for appealing AI-based decisions**, which undermines the rights to defense and confrontation.
- **Technology often outpaces the law**. The role of law is not to inhibit scientific progress, but rather to accompany, regulate, and humanize its applications. Attempts to limit technological development often prove futile, as technology quickly advances beyond such constraints.

Recommendations :

- The **Algerian legislator** is urged to enact a dedicated “**Artificial Intelligence Ethics Law**”, which would establish a national AI and information center comprised of legal and technical experts. This body would evaluate both imported and domestically developed AI systems, ensuring their ethical and regulated use.
- **Mandate periodic reviews** of AI systems used in courts to ensure neutrality, fairness, and transparency, and to detect potential algorithmic bias.
- **Establish an independent national oversight authority** for judicial AI systems, responsible for approving, certifying, and supervising their alignment with legal and ethical standards.
- **Empower the national bar association and regional legal unions** by creating digital transformation training centers for lawyers and hosting conferences and seminars on the future of legal tech.
- Propose a **legal framework for the recognition of AI-based legal assistants (smart lawyers)**, incorporating clear technical and legal safeguards for protecting databases and AI systems as vital components of the digital litigation process.

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