

Artificial Intelligence in Algerian Law: Current Situation and Prospects

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Abstract

Artificial intelligence occupies an increasingly important place within the modern legal system. It has brought clear changes to criminal law and business law by accelerating procedures, analyzing data, and detecting and predicting crimes. It also supports the work of prosecutors and forensic experts, as well as facial-recognition technologies. In business, AI has contributed to the development of smart contracts, data protection, and electronic payment systems. It has also influenced the legal profession through contract analysis, document drafting, case-law research, and the prediction of case outcomes. It also helps judges sort case files and classify judgments. In Algeria, the state launched the National Artificial Intelligence Strategy 2020-2030 and established specialized centers and schools, such as SKAILAB and ENSIA, to support scientific research and train qualified professionals. It has also encouraged start-ups. Practical implementation, however, still faces major challenges. The most important are weak digital infrastructure, the absence of a clear legal framework, and limited institutional and societal awareness. Greater legislative and technical efforts are therefore required to ensure the safe and effective use of this technology.

Keywords: Artificial Intelligence, Personal Data Protection, Algorithms, Expert Systems, Legal System

Introduction

Over the past two decades, the world has undergone a profound transformation driven by rapid advances in digital technology. Artificial intelligence has been at the forefront of this change and has become a central element in economic, social, and legal sectors. As its use has expanded, AI is no longer merely a supporting technical tool. It has become an influential force that reshapes traditional systems and introduces new approaches to thinking, management, and decision-making. This development has clearly affected the legal system, which now faces unprecedented challenges. It must respond to these transformations while also developing a legislative framework capable of accommodating this modern technology with appropriate caution and effectiveness.

In criminal law, AI applications have introduced major changes through the analysis of criminal data, the identification of behavioral patterns, and the prediction of crimes before they occur. They also support investigations through facial-recognition tools and the linking of evidence. In business law, AI has improved transactions, supported the development of smart contracts, strengthened electronic payment systems, and enhanced personal-data protection. The legal profession and the judiciary have not remained outside this transformation. Contract analysis, case-law research, and predictions about case outcomes are increasingly used to accelerate legal work and improve its accuracy and efficiency.

In Algeria, the state has sought to keep pace with these developments by launching the National Artificial Intelligence Strategy 2020-2030. It has also established specialized research centers and higher schools to train professionals capable of leading this transition. These steps are important. Yet practice reveals a gap between the stated ambitions and the available means of implementation. Several obstacles remain, including weak digital infrastructure, the absence of a clear legislative framework for AI, and limited institutional and societal awareness of its risks and opportunities.

This leads to the central research problem addressed in this study:

To what extent have legal systems, both internationally and in Algeria, kept pace with the profound changes introduced by artificial intelligence in criminal law, business law, and the judiciary? What legislative and technical challenges hinder the development of a legal framework that can ensure the safe and effective use of this technology?

Section One: The Position of Artificial Intelligence within the Legal System

Artificial intelligence (AI) is one of the most important technological innovations of the modern era. It has demonstrated a strong capacity to bring substantial change to legal, economic, political, and social fields. This is largely due to its role in improving efficiency and productivity and in offering innovative solutions to complex problems and challenges. As AI applications continue to expand, the effects of existing shortcomings on the legal system have become increasingly apparent. This makes it necessary to review many existing laws and regulations so that they remain compatible with modern technological changes and the evolving requirements of the digital environment.

First: The Position of Artificial Intelligence in Criminal Law and Business Law

Artificial intelligence is gaining an increasingly prominent place in criminal law and business law. It helps accelerate procedures, improve legal analysis, and create broader opportunities for using technology in the service of justice.

1/ The Position of Artificial Intelligence in Criminal Law

Artificial intelligence can be used at different stages of the criminal justice system¹. From evidence collection to the delivery of judgments, it can provide extensive support in solving crimes by producing more accurate results with fewer errors. For example, it can reconstruct incidents on the basis of available evidence and help investigators reach results more quickly². AI is also used in pretrial risk-assessment systems in many U.S. states. In addition, it can support crime prediction and contribute to prevention. Police authorities use AI algorithms to analyze very large datasets to predict potential crimes. Their effectiveness has been shown to be twice that of traditional practices³.

Artificial intelligence also contributes to reducing manipulation and bias in judicial decisions by providing technical support that helps promote justice. This support includes processing large volumes of surveillance data. Facial-recognition technology, for example, can identify suspects

¹Noura Amina Al-Akhnash and Mohamed Al-Aidani, "Artificial Intelligence as a Mechanism for Combating Cybercrime," *Journal of Law and Environmental Sciences*, Vol. 2, No. 2, 2023, pp. 537-538.

²Lubna Jassas and Mourad Shahmat, "Artificial Intelligence and Crime: Between Empowerment and Prevention," *Algerian Journal of Humanities and Social Sciences*, Vol. 8, No. 2, December 2024, pp. 63-64.

³The COMPAS system (a criminal-risk assessment system) in the United States is an AI-based assessment system used to assist judges in decisions concerning parole, bail, and sentence length. It is based on predictions about the defendant's risk of reoffending. COMPAS uses statistical analysis of personal, behavioral, and social data. It includes more than 130 questions covering psychological, social, and educational factors, as well as data such as criminal history, previous behavior, and social and psychological factors.

quickly and accurately. AI can also assist forensic experts in processing and examining DNA data and in detecting complex patterns that humans may fail to recognize. Prosecutors can use AI in investigations and prosecutions to analyze large datasets, identify crime trends, predict where crimes may occur, identify potential offenders and victims, and understand the development of criminal networks⁴.

2/ The Position of Artificial Intelligence in Business Law

Business law includes the rules that govern commercial and economic relations between individuals and companies. As AI technology develops, these rules need to be aligned with modern innovations. One important area is smart contracts. These are digital programs that execute automatically when specific conditions are met. They constitute digital agreements governed by pre-programmed rules that define the rights and obligations of the parties and are executed automatically in accordance with specified conditions⁵.

Personal-data protection is another important area. As cyber threats increase, artificial intelligence provides advanced tools that can adapt to emerging risks and detect suspicious patterns. This can strengthen the security of sensitive information⁶.

Electronic payment must also be considered. It allows financial obligations to be performed electronically, whether the subject of the transaction is money, a service, or a digital product such as a book, software program, or online subscription. These transactions are carried out through secure payment systems. They may include electronic transfers, bank cards, electronic checks, or electronic money. Encryption tools and software are used to protect the confidentiality of banking data⁷.

Second: The Position of Artificial Intelligence in the Legal Profession and the Judiciary

The influence of artificial intelligence has extended to legal practice and the judiciary. It has changed both working methods and professional tools.

1/ The Position of Artificial Intelligence in Legal Practice

The legal profession has undergone important changes as a result of the digital revolution. A lawyer's role is no longer limited to studying and handling cases. Electronic tools are now used to save time, reduce effort, and strengthen professional capacity rather than replace the lawyer. Major AI applications in legal practice include contract analysis and the preparation of legal documents. AI tools can review contracts, identify risks or compliance issues, and produce initial drafts based on criteria set by the lawyer. The lawyer can then review and improve those drafts. Major international

⁴Lubna Jassas and Mourad Shahmat, previously cited work, p. 64.

⁵Oum El-Kheir Bahri, "Application of Artificial Intelligence in Financial Transactions: Digital Money as a Model," *Journal of Real Estate Law and Environment*, Vol. 11, No. 2, Algeria, 2023, p. 143.

⁶See: <https://www.webayloul.com>, accessed 12 november 2025 at 01:18.

⁷Electronic payment is the performance of financial transactions through the internet or digital networks by using digital means such as bank cards, electronic transfers, or digital money, without the need to handle conventional cash, while ensuring the security and confidentiality of financial data.

law firms such as *LexisNexis*⁸, in cooperation with some of the largest law firms in the United States, have begun adopting AI platforms that reduce time and cost⁹.

Generative AI can also help lawyers communicate with clients and answer their questions through chatbots. It can simplify complex legal information and keep clients informed about developments in their cases. It may also summarize and explain judgments¹⁰.

Other AI applications include tools such as *Ravel Law* and *ROSS Intelligence*¹¹. These tools provide fast and precise searches of case law and legal texts by using semantic analysis and linking relevant decisions. Tools such as *Lex Machina* and *Premonition*¹² can also analyze judicial data. They may be used to predict case outcomes or assess the performance of lawyers and judges¹³.

It should also be noted that *DoNotPay*¹⁴ developed the first robot lawyer to provide representation in speeding-ticket cases. The system receives instructions through an earpiece and interacts in real time. This technology, however, generated legal controversy concerning the unauthorized practice of law¹⁵.

Artificial intelligence and the legal profession can therefore both contribute to the development of the criminal justice system. At the same time, the distinct nature of each must be respected. AI is a branch of computer science based on the development and use of advanced techniques for processing and analyzing data. Legal practice, by contrast, is an established profession grounded in professional values, ethics, traditions, and legal customs. These principles remain central to legal work and to the safeguards that govern it.

⁸LexisNexis was established in the United States through the merger of two companies: Lexis, which specialized in legal databases, and Nexis, which specialized in news and information databases. The company developed during the 1960s and 1970s to provide rapid and organized access to legal information and judicial research. It introduced advanced digital methods to support lawyers and researchers in legal work.

⁹Sami Khalifa, "Artificial Intelligence and the Legal Profession: A Qualitative Shift in Legal Work," [available at http://independentarabia.com](http://independentarabia.com), accessed 13 november 2025 at 23:50.

¹⁰Ibid.

¹¹Ravel Law is an AI-based legal platform for analyzing case law and legal texts. It helps lawyers and judges understand legal trends, identify patterns in earlier judgments, and assess the prospects of success in cases. ROSS

Intelligence is an AI-based legal research tool that uses natural language processing to search laws and case law quickly and accurately. It helps lawyers find specific legal answers, summarize documents, and accelerate legal research and analysis.

¹²Lex Machina is an AI-based legal platform that analyzes judicial data, including case law and judgments. It enables lawyers to predict case outcomes, assess opponents and judges, and develop strategies based on data. Premonition is an

analytical tool that uses artificial intelligence to analyze judicial databases on a large scale. Its purpose is to predict case outcomes, assess lawyers and judges, and identify legal trends that can support strategic decision-making.

¹³Radwan Ben Sari, "Applications of Artificial Intelligence in the Field of Law," *Dafatir al-Siyasa wa al-Qanun*, Vol. 17, No. 1, University of Medea, Algeria, 2025, p. 32.

¹⁴DoNotPay is a U.S. company specializing in the development of AI-based digital legal services. It launched the first "robot lawyer" to provide automated legal assistance, including representation in speeding-ticket cases. It also assists users with complaints, refunds, and simple legal procedures. Its purpose is to facilitate access to legal services and reduce the time and cost borne by individuals.

¹⁵Wafa Mimouni and Nouredine Ammar, "The Use of Artificial Intelligence in the Modern Criminal Justice System," *Annals of the University of Algiers 1*, Vol. 38, No. 3, 2024, pp. 67-68.

2/ The Position of Artificial Intelligence in the Judiciary

Artificial intelligence can be used to support judges and improve the efficiency of justice systems. It can generate predictions about judgments based on data from earlier cases, especially in disputes involving maintenance, custody, visitation, and rent. It can also sort and classify documents attached to case files, thereby improving productivity and reducing the time and effort required from court personnel. In addition, AI can read and classify judgments automatically according to their type. It may also provide recommendations for assigning judges to particular cases or replacing them with other judges.¹⁶

Section Two: Manifestations of Artificial Intelligence in Algerian Law

Artificial intelligence offers important opportunities for the state. Algeria has therefore adopted several mechanisms to encourage its use while also seeking to address the challenges that hinder implementation. This section first examines those mechanisms and then considers the obstacles that the country faces in this field.

First: The National Strategy for the Development of Artificial Intelligence

Algeria launched the National Artificial Intelligence Strategy 2020-2030. The strategy was prepared with the contribution of 150 experts and is intended to keep pace with developments in technological innovation. It is based on six main pillars. These include strengthening capacity through education and training and applying AI in scientific research, healthcare, transport, energy, and technology. To implement the strategy, Algeria established a clear vision and specific objectives. It also created the Scientific Council for Artificial Intelligence to mobilize human and material resources, propose training plans, and identify opportunities for international cooperation¹⁷.

1/ Developing Scientific Research in Artificial Intelligence

Algeria has given considerable attention to digitization and data modernization as a means of supporting scientific research in this field. AI offers promising applications for research. The country is also seeking to build advanced digital infrastructure by focusing on human training, following the path of technologically advanced states, and extending digitization¹⁸. One of the main initiatives was the establishment of the Artificial Intelligence Center (SKAILAB)¹⁹. It is Algeria's first national AI center. Its purpose is to provide solutions for economic and industrial partners and to train specialists in computer science and artificial intelligence. Its tasks include:

- Establishing partnerships with operators in different sectors.
- Organizing cooperation with company managers to collect data and expertise.
- Collecting, coding, and classifying data.
- Developing AI models suited to the available data.
- Training university researchers and businesspeople.
- Implementing, testing, and deploying developed models.

¹⁶Arwa bint Abd al-Rahman bin Uthman Al-Jaloud, Provisions Governing Applications of Artificial Intelligence in the Judiciary, 1st ed., 1444 AH, pp. 71, 76.

¹⁷African Conference for Artificial-Intelligence Start-ups, December 2024, <https://www.aps.dz>, accessed 17 november 2025 at 18:25.

¹⁸Linda Samoud and Souhila Rahmani, "Artificial Intelligence as a Digital Technology Leading to an Emerging Educational Experience: The Inkidia Company as a Model," Journal of Media and Communication Studies, Vol. 2, No. 2, Algeria, 2022, p. 2.

¹⁹Established in February 2020 at the University of 20 August 1955, Skikda.

- Assisting users in identifying their needs in management and decision-support models²⁰.

The National Higher School of Artificial Intelligence (ENSIA)²¹ was also established in 2021. It trains engineers specializing in artificial intelligence and data science. It is intended to prepare qualified professionals who can contribute to the national economy and develop innovative solutions for health, energy, agriculture, and transport. The school aims to:

- Prepare highly qualified graduates to support the national economy.
- Promote innovation and technology transfer.
- Train students in scientific research methods.
- Contribute to the dissemination of digital culture and the production of knowledge.
- Develop scientific and applied research within national institutions.
- Address shortages of expertise in data science, computer vision, natural language processing, and speech processing.
- Support implementation of the National Artificial Intelligence Plan 2022-2023.²²

The National Higher School of Mathematics (ENSM)²³ was also established, and teaching began there on 12 October 2021. The school is intended to train highly qualified engineers in mathematics, support major companies, and develop scientific research and postgraduate studies.

Algeria also established the Scientific Council for Artificial Intelligence. It is a joint advisory body of the Ministry of Higher Education and Scientific Research and the Ministry of Knowledge Economy. It is responsible for assessing available capacities, proposing training plans, and strengthening international cooperation²⁴.

Algeria seeks to use artificial intelligence not only in education but also across economic and social sectors. This requires the coordination of efforts and the mobilization of both material and human resources to support these initiatives.

2/ Supporting Start-ups in Artificial Intelligence

It should be noted that Algeria ranks second in Africa in the Startup Ranking classification²⁵. This position is attributed to AI start-ups that offer opportunities to improve efficiency and develop products and services²⁶. It is also attributed to the Algerian government's support for these enterprises through legislation aimed at removing obstacles to their operation, as well as through the provision of necessary financing²⁷.

²⁰Ahmed Daqqa and Ahmed Kheniche, "The Use of Modern Artificial-Intelligence Technologies in Arab Countries: The Case of Algeria," *Journal of Economic and Financial Studies*, Vol. 17, December issue, University of Algiers 3, 2024, pp. 12-13.

²¹Presidential Decree No. 21-323 on the Establishment of the National Higher School of Artificial Intelligence, *Official Gazette*, No. 65, 26 August 2021.

²²Article 17 of Presidential Decree No. 21/323, cited above.

²³Presidential Decree No. 21-322 on the Establishment of a National Higher School of Mathematics, *Official Gazette*, No. 65, 26 August 2021.

²⁴Ahmed Daqqa and Ahmed Kheniche, previously cited work, p. 13.

²⁵A website specializing in rankings of start-ups and start-up ecosystems worldwide: <https://www.startupranking.com>.

²⁶Omar Haroun, "The Use of Artificial Intelligence in Start-ups in Algeria," *University of Ziane Achour, Djelfa, Algeria*, 2023, p. 10.

²⁷Ahmed Laalaoui, "Artificial Intelligence in Start-ups in Algeria: Forms of Use and Expected Implications," *Algerian Humanities Journal*, Vol. 9, No. 2, 2024, pp. 10-11.

Examples include the company Inkidia, which developed the Mualim digital-learning platform and obtained a patent. Another example is Pikafire, a company specializing in firefighting equipment. It developed a robot that can extinguish fires from a distance of 300 meters. The company Nabatek also launched the Vito platform to help farmers identify crop diseases and possible solutions²⁸.

Artificial intelligence strongly supports these and other start-ups by enabling the creation of data banks and the analysis of markets. These tools can help companies develop products that respond to consumer needs²⁹.

Second: Challenges Associated with the Application of Artificial Intelligence Systems in Algeria

Despite Algeria's efforts to keep pace with global technological developments, its ambition to adopt artificial intelligence effectively faces a range of structural, legal, and organizational challenges, as well as obstacles related to societal awareness and the economic structure³⁰. These challenges can be classified as follows:

1/ Inadequate Network Infrastructure

Strong infrastructure is a basic condition for the success of any national artificial intelligence strategy. Algeria, like many Arab countries, suffers from limited investment in digital infrastructure, especially infrastructure related to data collection and processing. This includes the absence of reliable broadband networks capable of transferring very large volumes of information, a shortage of data centers equipped to store and process big data, and limited high-performance computing systems needed to train and operate AI algorithms. A shortage of qualified technical expertise in this field also makes advanced projects more difficult to implement. A 2022 UNESCO report confirms that investment in this field in Algeria remains limited and is still below the level required to acquire, develop, and control artificial-intelligence technologies³¹.

2/ Legal and Regulatory Challenges

In civil and commercial matters, artificial intelligence relies on large databases containing extensive information about individuals. This may include names, telephone numbers, professions, occupations, sex, health status, preferences, purchasing choices, reading habits, bank accounts, social-security numbers, and other personal information. Under the European definition used in data protection, such information may be classified as "personal data." This means any information relating to an identified or identifiable natural person, whether that person can be identified directly or indirectly through a specific number or another element of identity.

This definition requires such data to be handled with great care. Its sensitive nature makes it necessary to define clearly how it may be used and which uses are permitted or prohibited. Entities handling these data must respect the applicable protections and must not exploit the data for purposes contrary to the law, particularly through intelligent systems. Any negligence in safeguarding or

²⁸Ahmed Laalaoui, *ibid.*, p. 15.

²⁹Hakim Ben Jeroua and Rahma Hussein, "The Role of Artificial Intelligence in Enhancing the Prospects of Start-up Success," *Economic Additions Journal*, Vol. 9, No. 1, 2025, pp. 8-9.

³⁰According to a 2020 study issued by the National Center for Research and Development in Technology entitled "Artificial Intelligence in Algeria: Current Situation and Challenges."

³¹Alaa Eddine Zeroual, "The Impact of Artificial Intelligence on Scientific-Research Outputs in Algeria," conference paper, University of Tebessa, Algeria, 12 December 2023, p. 14.

electronically storing the data must also be avoided. The data must not be used for purposes other than those for which they were collected, especially in commercial matters³².

Algeria has enacted certain laws that indirectly concern artificial intelligence, including Law No. 18-07³³. That law seeks to ensure respect for privacy and protect fundamental rights. The existing legislative framework, however, remains insufficient. It lacks specific rules governing the use of AI technologies and effective mechanisms for oversight and enforcement. Weak protection against computer and data breaches in Algeria is also attributed to reliance on software that is easily breached. This exposes institutions and individuals to increasing security risks³⁴.

The use of artificial intelligence in products and services also creates new risks and questions concerning consumer rights. The consumer is generally the weaker party in the contractual relationship. AI may also create new forms of power and new information imbalances between producers and consumers.

The legislature must therefore introduce legal amendments that respond to these developments. Particular attention should be given to the main legal requirements for consumer protection³⁵, especially the following:

Clear and precise disclosure rules: Companies should be required to disclose explicitly and specifically all relevant information about products that incorporate artificial intelligence. This would allow consumers to understand the nature of a product before purchasing it.

Detailed descriptions of AI systems: Companies should explain the objectives of the system, how it was developed, what data it uses, where those data are stored, and how they are used. This is necessary to ensure full transparency.

Oversight of high-impact systems: Special supervision should apply to systems that may have a significant effect on people's lives. Information about such systems should also be entered into publicly accessible databases.

Accountability of companies and individuals: Consumers should be able to hold accountable any entity that violates their rights or causes them harm. This should include cases involving system malfunction or security breaches.

Safeguards for vulnerable groups: AI regulations should include specific measures that allow persons harmed by these systems to file complaints and compensation claims easily and to obtain effective redress.

3/ Limited Institutional and Societal Awareness of the Importance of Artificial Intelligence

Most Algerian institutions, whether public or private, have not yet fully recognized the considerable potential offered by artificial intelligence. This is mainly due to two factors. The first is the lack of qualified human resources within these institutions. The second is limited awareness and insufficient knowledge of how these technologies can be used. As a result, many institutions continue

³²Mohammad Irfan Al-Khatib, "Guarantees of Rights in the Digital Age: From a Change in Concept to a Change in Protection. A Reading of the European-French Legislative Position with an Application to the Kuwaiti Legislative Position," Kuwait International Law School Journal, No. 3, Part 1, Doha, 2018, p. 250.

³³Law No. 18/07 of 10 June 2018 on the Protection of Natural Persons in the Processing of Personal Data, Official Gazette, No. 34, 10 June 2018.

³⁴Ahmed Daqqa and Ahmed Haniche, previously cited work, p. 31.

³⁵Nassima Drar, "Consumer Protection in the Digital Cyber World," Journal of Legal Studies and Research, No. 6, University of Oran 2, 2023, p. 50.

to rely on old, traditional programs and tools. This slows technological modernization and delays the achievement of the desired economic and social development.

AI technologies have also begun to be used in transactions. The legal sector, however, lacks enough qualified professionals capable of keeping pace with these technologies. Most employees in Algeria do not have sufficient technical expertise, which makes the use of these technologies difficult in the legal field. Nevertheless, Algeria has launched positive initiatives in this area. These include the establishment of the first higher school of artificial intelligence in North Africa³⁶.

There is also growing concern about an "arms race for artificial intelligence." Institutions may use AI to strengthen cybersecurity, while cybercriminals may exploit it to launch more advanced and widespread attacks. This dual use highlights the importance of continuous learning and adaptation in both artificial intelligence and cybersecurity. The two fields are distinct, yet they share the common objective of building a safer digital future. A secure future therefore requires greater awareness of how these technologies are developed and used. It also requires the combined use of cybersecurity and artificial intelligence to protect personal and public data. Detailed legislation is needed to regulate such uses³⁷.

4/ Slow Digital Transformation in Economic and Social Sectors

Although Algeria recognizes the importance of digital transformation, the pace of this transformation remains slow in most economic and social sectors. Apart from a number of limited initiatives in sectors such as higher education and national education, many institutions still show limited adoption of modern technology. This may result from inadequate resources or from a shortage of qualified professionals who can operate and maintain these systems. As technological development accelerates worldwide, failure to keep pace with advanced countries will widen the digital divide.

5/ Absence of an Integrated National Strategy for Planning and Governance

The absence of an integrated strategic vision and effective governance is one of the main obstacles to building a society based on artificial-intelligence technologies. Algerian legislation still contains no explicit legal definition of artificial intelligence. The term appears only incidentally in some texts, such as legislation on intellectual-property protection. This legislative gap does not protect innovation or encourage scientific research and development. It may also discourage individual and institutional initiatives because there is no legal framework that guarantees rights and regulates responsibilities.

Decisions made by autonomous artificial-intelligence systems should be based on ethical principles derived from the values and principles of society. These principles should be positive and beneficial, and people should be able to trust and rely on them. AI ethics are defined as a set of values and principles that guide the behavior of intelligent systems and ensure that their decisions are consistent with the public interest. This requires mechanisms for detecting harmful practices and taking corrective action. Machines should also be equipped with ethical principles that enable them to operate responsibly. When systems are designed in this way, ethical challenges can be addressed

³⁶Salima Negaibi, "The Use of Artificial-Intelligence Technologies in Knowledge Management in the Knowledge Society," *Al-Rustumiya Journal*, Vol. 3, No. 2, 2022, p. 340.

³⁷Hatem Ben Azzouz and Halima Menani, "Cybersecurity and Cybercrime in Postmodern States," *Al-Risala Journal for Media Studies*, Vol. 6, No. 2, 2022, p. 586.

and resolved more effectively, ultimately enabling them to make ethical decisions autonomously, responsibly, and safely³⁸.

When AI systems are designed and developed, standards of fairness, neutrality, inclusion, and balanced representation of all segments of society must be ensured. The resulting outcomes should be unbiased, inclusive, and objective. Systems should not be designed to target a specific group on the basis of sex, age, religion, race, or other characteristics, and they must remain consistent with principles of equality. AI systems should also be trained on data free from bias to ensure inclusion, while any latent errors or biases in algorithms should be identified and removed³⁹.

Conclusion

The study shows that artificial intelligence has become a central element in the development of the modern legal system. In criminal law, it has made a notable contribution through data analysis, crime prediction, and support for judicial investigations. In business law, it has contributed to the development of smart contracts, data protection, and electronic payment systems. The findings also show that the legal profession and the judiciary are undergoing a significant transformation as a result of AI applications. These applications assist with contract analysis, case-law research, and the classification of judgments. They therefore improve the efficiency of legal work and reduce human error.

Actual implementation in Algeria nevertheless faces several challenges. The most important are weak digital infrastructure, the absence of a clear legal framework governing the use of these technologies, limited institutional and societal awareness, and the slow pace of digital transformation in economic and social sectors. These findings confirm that fully benefiting from artificial intelligence requires coordinated efforts by legislative, academic, and institutional bodies.

Addressing these challenges requires cooperation between the state and the private sector. Priorities include investment in digital infrastructure, development of the legislative framework, training of qualified professionals, and greater awareness of the role of artificial intelligence in supporting sustainable development.

The study therefore proposes the following main recommendations:

1. Develop digital infrastructure and data centers to ensure the effectiveness of artificial-intelligence applications.
2. Enact clear laws governing the use of artificial intelligence in legal and commercial fields while ensuring the protection of personal data.
3. Strengthen training and build the human capacities required to work effectively with this technology.
4. Adopt oversight and ethical mechanisms to ensure fairness and neutrality in decisions made by intelligent systems.
5. Encourage cooperation between start-ups and the public sector in order to accelerate innovation and apply artificial-intelligence solutions in a responsible and safe manner.

³⁸Khadija Mohamed Drar, "Artificial Intelligence and Robot Ethics: An Analytical Study," International Journal of Library and Information Sciences, Vol. 6, No. 3, Egyptian Association for Intelligence and Information, Egypt, September 2019, p. 243.

³⁹Principles of Artificial Intelligence Ethics, Saudi Data and Artificial Intelligence Authority, Saudi Vision 2030, First Edition, August 2022, p. 6.

These recommendations confirm that artificial intelligence is not merely a technical tool. It is an essential component in the development of the justice system and the achievement of comprehensive digital development. Its use, however, must be guided by a robust legal and ethical framework.

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