



THE USE OF ARTIFICIAL INTELLIGENCE IN LEGAL SYSTEMS

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Abstract:

The use of Artificial Intelligence in legal affairs is considered a growing key interest regarding its potential effects on legal affairs. The search on this field requires a multi-angle method combining theoretical and practical sides. The principal goals of the research lie on understanding the process of integrating AI in legal affairs in a reasonable and effective manner.

Forming practical and specific recommendations for legislators to put into consideration, along with the rapid developments of AI. And that would be by providing guidelines for lawyers, judges, and those in the field of law about taking advantage of AI and taking into consideration moral and legal guidelines.

Keywords: Artificial intelligence, legal systems, employment, legal controls.

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Introduction:

In a world, change goes fast in a rhythm never seen before, AI appears as a pushing force that reforms human civilization. Where AI is no longer just a future concept belongs to sci-fi movies, it became a living reality in our daily lives. From the simplest of tasks to the most complicated. This field bears witness to developments never seen before, pushed with the rapid development in AI. Huge amounts of data (Big Data) and the invention of algorithms that teaches machines to be more developed and affective.

The effect of AI has surpassed traditional boundaries of tech-fields, it has reached all fields of daily human life, in economy, education, health and justice. For instance, the use of Artificial Intelligence if law affaires aim to enforce quality and precision, and the ability to achieve justice. Instead of lawyers spending long hours searching criminal records or going through thousands of documents, AI tools could do the job fast and precise. Based on the latter a problematic could be asked: **What are the main challenges (legal, moral, technical, social) that faces the use of Artificial Intelligence in legal affaires?**

To answer this problematic, the descriptive analytic approach was applied to tackle all the sides of the subject, starting with the concept of AI and its most important applications, and then the use of Artificial Intelligence in legal affairs.

The First Chapter: The concept of Artificial Intelligence

We tackle if this chapter the definition of Artificial Intelligence and its types, then we tackle its applications.



First: The definition of Artificial Intelligence:

The definition of Artificial Intelligence differs, because it consists of two words, Intelligence and Artificial, and each has its own meaning. Intelligence according to Webster means: The ability to understand reasons or new and changing situations. The ability to understand, realize and learn about new circumstances and situations. “Meaning keys of intelligence are, realization, understanding and learning.

whereas the word Artificial, it is related to the verb (make, try to make) from therethis word is assigned to all the things that may be created as a result of an action through making and forming concrete and abstract things by humans aside from the things already existing, in a natural state without the interference of humans.

The word Artificial Intelligence means: the machine’s, the computer’s or the software’s ability to do some activities and tasks that require super-Intelligence such as real-time interference, diagnosing and self-moving in doing the assigned tasks.

The National French Morals Committee says that Artificial Intelligence: A combination of tech programs dedicated to do tasks that humans do in a more satisfactory way in the present time. Because it requires highly-complicated mind-equations such as: cognitive learning, memory organizing and critical thinking. Those equations require knowledge abilities allows it to achieve goals independently.

Throughout the latter, we could say that Artificial Intelligence is a field that aims to challenge the human intelligence, depending on specialized programs and techniques to deal with different situations that may occur.

Second: Artificial Intelligence classifications

Artificial Intelligence could be divided into three classifications that are mainly:

- **Tight or weak Artificial Intelligence:** It is considered one of the weakest types of Artificial Intelligence, it has been named that because its applications can do tight, obvious and weak tasks, unlike other types. Such as cars with simple self-driving system, or even speech and image recognition programs, or a chess game in smart PCs, and smart communication devices. This type is the most known and the most popular nowadays.
- **Strong Artificial Intelligence:** it is called the general Artificial Intelligence, meaning Intelligence that its applications could function as a human being, in thinking and realization. It is a type of Artificial Intelligence that has the ability to understand, learn and practice Intelligence in any thinking task a human could do. Simply, it is a smart system that not only does a specific task (such as recognizing photos or play chess) it has a wide ability to be thinking, planning, problem solving, complicated understanding of the simple language exactly as a human.
- **Super Artificial Intelligence:** or known sometimes as extraordinary Artificial Intelligence. It is a virtual concept points to a level of Artificial Intelligence surpasses human intelligence almost in all aspects. That means the smart system not only that it has the ability to simulate the human mind (it's the goal of general Artificial Intelligence) but it surpasses it in a big way, in every mission, including:
 - **Creativity:** the ability to generate ideas, artworks and scientific discoveries surpasses way better the human mind.



- **Problem Solving:** finding solutions to very complicated problems that humans may not fully grasp.
- **Learning:** super-speed and confidence in knowledge and skills acquisition from data and experiences.
- **Strategic Thinking:** The ability to put plans and execute them on a wide range in long-term with precision and effectiveness.
- **Memory and understanding:** great ability in acquiring info and a deep understanding that surpasses human ability.

Third: Artificial Intelligence Applications:

Artificial Intelligence has many uses, among them: computer vision, voice recognition, automatic programming, expert systems, robots, PC chess games, such as:

- **Natural language processing:** it is a branch of Artificial Intelligence focuses on making PCs understand, process and generate human language. Simply, it makes machines capable of understanding what we say or write, and replying to us in a meaningful way.
- The power of natural language processing lies in its various applications that affect our daily lives and many industries.
- **Virtual assistants and robots:** chat robots enable interactions with clients and offer immediate support and answering repeated questions.
- **Automatic Translation:** Allows transferring texts from a language to another keeping the meaning and the context.
- **Emotions Analysis:** text analysis (tweet reviews on social media) to identify the hidden emotions, whether

they are positive, negative or neutral. This is useful for companies to understand employees' opinions.

- **Text resumes:** creating short resumes for long articles and documents, which saves time and eases the extraction of core information.
- **E-mail cleanup:** specifying spam emails and classifying inbox email to: primary, social and promotions.
- **search engines:** enforcing the ability of search engines to understand users' questions in normal language and giving more specific and related results
- **Contextual spelling:** tools like Grammarly that's help enhance the quality of writing through correcting spelling mistakes and suggesting propositions in context
- **Automatic programming :** Or automated generating off code, it is a concept in computer sciences aims to make computer devices capable of writing editing and enhancing code on its own in other words it's a technique allows programming system produce another software or a part of it based on the high level descriptions or some entered data without and human interference in all code details.
- **Computer vision:** it is a multi-specialty field in Artificial Intelligence aims to make computers see and understand visual world same way humans do. That includes processing and analyzing pictures and video clips and other visual data to extract useful information that could be used to make decisions or do certain tasks.
- **Human robot:** or simply: robot, is a machine designed to do certain tasks independently or semi-independently. Mostly they are able to interact with its concrete



environment. Robots differ a lot in size and shape and function. From giant industrial robot handles to small home robots, even robots like humans or androids.

Second chapter: chances of using Artificial Intelligence in legal affair:

in the digital world information technology has become a part of different life aspects, including legal fields, or knows as natural language processing, it is one of the inventions that made a revolution in how to analyze and understand legal texts. LexNLP has been developed to analyze huge amount of legal data fast and efficiently. In this research we tackle the understanding of legal texts in the first chapter, and it the second chapter we tackle contracting through Artificial Intelligence contracts.

First : Creativity in understanding legal texts (LexNLP)

Legal researches and document analysis is considered among the key skills for workers in legal sector, it is a decisive process to guarantee the safety of legal procedures. This process includes the search in different legal sources, like laws, panels, and juridical laws, plus analyzing legal documents and explaining them. In this chapter, we could tackle the importance of research in legal field and how LexNLP works and its most important applications in legal text analysis according to the following:

1-The importance of research in legal filed:

The role of scientific research in studying and linking laws and legislations between doctrine and enactment among the most important fields in scientific research in legal filed.

The importance of these scientific researches generally lies in religious countries. These studies contribute in linking

between different doctrine and general laws, and different sharia scholars. For example, in this topic, studies and legal researches related to doctrine laws and penalties about general crimes and how they're related to these rules with religions and those related to families.

Scientific research is considered to be an important role in studying different legislations, and rules, and their connection between doctrine and legislating. And to understand how scientific research has part in this process you better understand the differences between doctrine and legislation, where the doctrine side points to studying and explaining the rules and legal principles and legal systems considering to be the philosophical core and theoretical.

On the contrary, legislation points to set rules and update them by the legislation specialized authority, like parliament or Congress.

Scientific research could contribute in linking between doctrine and legislation through providing visions on evidence about Legal decisions and panels and instructions, and how they could affect society.

2- How does LexNLP work?

This program works using AI techniques and automatic learning to analyze legal texts. The various group of algorithms is used to analyze legal texts and extract from them important information. These algorithms are trained on huge data to prove its work. Where legal texts are analyzed using NLP (normal language processing techniques), and that is why dividing these texts into small units like words and phrases and paragraphs and then analyzing these units to extract from them important information, after that auto learning techniques are used to



analyze legal texts. Algorithms are being trained on huge amounts of legal data to improve its work and accuracy.

Second: its most important applications in analyzing legal texts

artificial intelligence is making a huge turn in the field of law, through improving accuracy and Adequacy In legal affairs. Practical applications of artificial intelligence in this field include a wide group of regulations and rules that help a lot of lawyers, judges and law firms to work more efficiently and fast.

Using AI in applying law could lead to privacy issues, for instance facial recognition software could be inaccurate, unclear and target limited groups in an unfair manner. That's why using artificial intelligence in practicing law must be under the umbrella of human rights where there's no racism and personal rights violations.

These are some of the legal applications :

- It could be used to review laws and regulations so they could analyze these rules and regulations to extract important information .
- It could be used also to analyze legal cases. Where they could be analyzed to extract important information .
- It is used also to analyze legal documents so there could be analyzed to extract important information .
- Lastly it could be used to analyze legal data, where they could be analyzed to extract important information .

Third: contracting through artificial intelligence contracts

Artificial Intelligence is used in analyzing legal contracts thanks to normal language processing techniques where legal terms and risks are identified in a quick manner and this done using the appropriate techniques such as: law Geex ,Kira

systems. Which are able to review legal contracts and discover errors and unusual material, which gains time and limits errors then by humans. And from its benefits it limits legal risks that are unnecessary through analyzing thousands of pages in a short period of time.

Artificial Intelligence uses a technique known as: automated legal review, through this technique artificial intelligence are relies on the reviewing thousands of legal documents very fast and very accurate such as contracts, reports and legal data. Through using techniques known as Everlaw and Relativity, which use automated learning techniques to examine and analyze huge quantities of legal documents, to extract important information from them .

Artificial intelligence uses AI assisted legal drafting, where Artificial Intelligence systems could help lawyers in drafting legal documents, such as, memoirs and writing petitions. Thus, Notaries in writing contract through analyzing previous legal texts, and giving suggestions to improve clarity and accuracy. This is by using some new techniques, such as, Litera, Contract and Express, which give immediate help in writing and guarantees working under current laws. Among its benefits, the increase of accuracy and timesaving, while writing important legal documents.

Four: The challenges of artificial intelligence contracts -some problematics-

1. Although artificial intelligence contracts Are extinguished from traditional contracts, but there are many characteristics that may be technical or legal obstacles in artificial intelligence contracts. Some of them are the following:



- **It's done without an intermediary:** traditional contracts are done mostly through intermediaries or third parties whether they are brokers or registration parties or contract issuing parties. which increases financial burdens, and the lack of privacy for contract materials as well as the complication of procedures.
 - Whereas in artificial intelligence contracts they avoid involving third parties between contractors, that is through following one to one policy. The contract is done between parties without an intermediary involvement. this cuts costs and saves time. Where the contract is direct between the two parties.
 - **Safety in transactions:** Artificial intelligence contracts are known for being safe and they are difficult to hack, its data is preserved in a safe manner which makes it difficult to hack. In comparison to traditional contracts. However, it is difficult to change or edit contract data and personal information related to artificial intelligence contracts. Where the two parties in the contract have two types of encryption keys.
2. Although there are benefits of artificial intelligence contracts, yet there are some problems which are as follows.
- **Technical errors:** some of these contracts may contain technical errors, and that is through inserting wrong encryption codes that contain artificial intelligence contracts materials, which reveals the real will of both parties of artificial intelligence contract.
 - **Difficulty of editing:** when the two parties of artificial intelligence contract agree, It is difficult to edit these terms

of contrast, these contracts Are decentralized, which prevents data editing and forging.

- Legal issues that face artificial intelligence contract:

They are considered one of the most known obstacles that face artificial intelligence contracts. Where it's been asked whether these contracts are legal or not, because they are just a computer software the contract is initiated through, after it has been done according to the law.

- The answer to this is, that all acts are done through artificial intelligence contracts are just an execution to the contractors will, meaning these contracts are done after the agreements of the parties, after that it is executed through artificial intelligence techniques, and automated execution of contracts.

Conclusion:

We could say that artificial intelligence is like a massive revolution, that contributes in enhancing accuracy and quality and providing time in many legal operations. Through tools of normal language processing. Lawyers and legal entities could provide services faster and more accurate, which enforces justice and cut costs on clients.

The way artificial intelligence works it's like the way a human mind works, artificial intelligence represents the experts and smart systems that work professionally and work in a way that is like the work of a human mind, and that is through Insight and prediction in a way mostly bigger than the human mind.

Although, the promising opportunities that it offers this set, important challenges. Affair that are related to legal responsibility when errors happen in artificial intelligence systems and transparency and how these systems make decisions,



and potential discrimination in data, that it has been trained on all cases that need thorough processing. Also, there are questions about the effect of artificial intelligence on the law profession itself, and will that change the role of lawyer or a judge in the future.

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