Artificial Research in Legal Education and Research

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Introduction:

Artificial intelligence (hereinafter, AI)**,** has no universally accepted definition of artificial intelligence. In terms of its ultimate goal, AI can be defined as the process of simulating human intelligence through machine processes.

According to the AIGO, an AI system is a system based on algorithms and self-learning guided by machine learning and deep learning that can perform certain human cognitive capabilities such as interacting with the environment through sensors, processing information, making decisions, and acting autonomously.[1] Its components include an algorithm, machine learning, and deep learning. An algorithm is a predefined set of automated procedures.

Machine learning is the process of parsing data in order to learn, predict, and make a decision based on a set of variables.[2] It enables AI to perform certain tasks without being given explicit instructions. It employs 'iteration,' which is the process of repeatedly feeding data into an algorithm in order to improve its outputs. Deep learning is a machine learning technique that aims to enable example-based learning in machines and autonomous systems.[3] It provides a model for the machine to evaluate examples and infer patterns for the solving of future problems.

Types of AI:

AI is generally classified into two:

1. General AI:

An extremely complex algorithm(s) that think like people across multifaceted problem domains and have the ability to reason generally, which is the goal for the future.

2. Narrow (applied/ specialized) AI:

Systems designed to execute specific tasks or a single function, and will never rival the cognitive depth of a human being[4].

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[1]techtarget.com. 2022. *DEFINITION What is artificial intelligence (AI)?*. [online] Available at: <https://morethandigital.info/en/the-metaverse-explained-definition-introduction-and-examples/> [Accessed 17 October 2022].

[2] Iqbal H. Sarker, Machine learning: Algorithms, real-world applications and research directions - SN computer science SpringerLink (2021), https://link.springer.com/article/10.1007/s42979-021-00592-x (last visited Oct 18, 2022).

[3] Jason Brownlee, What is deep learning? Machine Learning Mastery (2020), https://machinelearningmastery.com/what-is-deep-learning/ (last visited Oct 18, 2022).

Steven Pinker opined that AI does not have intentionality or a real attitude, but only sets tasks and goals; unlike humans, it does not make real judgments based on principles, rules, priorities, or values[4]

Purposes of AI:

Marvin Minsky, one of the founders of AI gave two purposes to the system:

3. To understand the workings of human intelligence
4. To create useful computer programs and computers that can perform intelligently[5]

Legal research:

It is always necessary for lawyers to conduct legal research in the course of attempting to resolve various legal issues.

Legal research influences almost all of the activities of legal professionals. It is the process of identifying, analysing, and applying law to a specific problem cause the scope of the law is vast, its nature is ever-changing, and it varies from jurisdiction to jurisdiction, it is impossible for anyone to know all of the laws. As a result, legal research has become indispensable for lawyers in order to keep up with the constant changes in the law while making proper (relevant) representations of the law to courts as it relates to their clients' cases.[6]

AI in legal education:

Law schools are now incorporating legal technology modules into their curricula, ranging from legal bots to block chain and e-commerce. They are intellectually stimulating for law students and provide them with a competitive advantage when entering the workforce. A number of universities offer master's degrees in law, technology, and computer science.

Certain areas of the law, such as intellectual property law and governance, are ripe for cross-departmental collaboration.[7] It is widely believed that everyone playing a role in the practice of law should become familiar to and be able to make use of artificial intelligence and computer technologies.

This is why Thomas Gordon suggested making artificial intelligence a part of legal theory as a part thereof in law schools in his article, 'Artificial Intelligence and Legal Theory at Law Schools'. At its heart, practicing as a lawyer means understanding people. While automation and data analysis are invaluable tool to assist lawyers in their day-to-day work, this technology can only go so far.[9]

AI and the legal profession:

In 1973, Lexis, the first commercial, full-text, electronic database of case law was aggressively marketed To attorneys and judges. It was subscribed to by the top tier law firms in New York as well.[8]

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[4] Steven Pinker, *Enlightment Now, the Case for Reason, Science, Humanism, and Progress* (Penguines Book Limited Publishers, 2018) 35.

[5] Edwina L. Rissland, 'Artificial Intelligence and Law: Stepping Stones to a Model of Legal Reasoning'. Yale Law Journal 1957, 1981 <https://digitalcommons.law.yale.edu/ylj/vol99/iss8/4/> accessed 18 October 2022.

[6] The basics of legal research in 3 steps, The basics of legal research in 3 steps | Thomson Reuters, https://legal.thomsonreuters.com/en/insights/articles/basics-of-legal-research-steps-to-follow (last visited Oct 18, 2022).

[7] IE University, Ai in the classroom: How artificial intelligence is changing law students' day-to-day lives IE Driving Innovation (2020), https://drivinginnovation.ie.edu/ai-in-the-classroom-how-artificial-intelligence-is-changing-law-students-day-to-day-lives/ (last visited Oct 18, 2022).

When it comes to AI in the legal profession, it can be traditionally defined as the programming of computer technology to process, analyze, and complete a variety of legal tasks traditionally performed by lawyers. With the advent of modernization, AI has undeniably gained global attention. Even in the case of China, a relatively closed country, the court has gradually opened the door to information construction since 1990s.[8]

Scope of influence of AI on legal profession:

From using the typewriters to now using a computer, from using only libraries for legal research to using online portals for finding relevant case laws, from fax machines to emails, each advancement has been transformative in the field of law[9]. The scope of influence of Artificial intelligence on legal profession has been constantly widening and can be discussed in two legs which are as below:

1. Macroscopic aspect:

Traditionally, the legal industry has been highly dependent on the input of human resources to provide substantive legal solutions, which is costly and inefficient. Therefore, there will be a considerable focus of research and development on use of AI in legal research. In the high-level application field, AI in complex scenes can assist or even replace part of the work of legal professionals, forming a new human-computer collaborative case processing mode. Various areas of AI in the legal sector can be discovered with adequate research and careful comprehension of the legal industry by IoT app development companies.[10]

2. Microcosmic aspect:

In case push, knowledge index query, auxiliary conviction, sentencing reference, evidence review and judgment, integrated support in court, voice / image reading and transformation, case management, deviation analysis, judicial / administrative connection, automatic generation of documents and peer-to-peer proofreading, artificial intelligence has shown great advantages. Due to the human nature of education and the complexity of legal knowledge, or the conservatism of practitioners, artificial intelligence has little influence on legal education. Legal education, in the coming times, will have to move away from a retrospective epistemological stance, and evolve towards a prospective and projective stance, incorporating knowledge from technological areas and quantitative methodologies, without neglecting the exercise of traditional normative skills, communicative and narrative values that are highly evaluated ny law professionals[13].

It is believed that artificial intelligence has great scope for Indian Legal Sector and a combination of artificial intelligence and law will witness immense growth in the near future.[11] The COVID19 pandemic

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[8] Oishika Banerji - et al., Role of artificial intelligence in law iPleaders (2021), https://blog.ipleaders.in/role-of-artificial-intelligence-in-law/ (last visited October 18, 2022).

[9] Pallavi Kapur, Scope of Artificial Intelligence in Law, https://legaldesire.com/scope-of-artificial-intelligence-in-law/ (last visited Oct 18, 2022).

[10] Sanjana Shikhar, Role of artificial intelligence in law, https://blog.ipleaders.in/role-of-artificial-intelligence-in-law/#Application_of_artificial_intelligence_in_the_legal_world (last visited Oct 18, 2022).

[11] Mirza Aslam Beg, Impact of Artificial Intelligence on Indian Legal System, https://www.legalserviceindia.com/legal/article-631-impact-of-artificial-intelligence-on-indian-legal-system.html (last visited Oct 18, 2022).

has only acted as a catalyst to speed up developments caused due to technology which results in an increased need and use of AI systems.

It will be better for the Legal Industry if the government takes the initiative to clarify the norms for Artificial Intelligence adoption and defines its scope in the Legal Sector. [12]

Four primary areas within the legal field that play to AI's strengths:

There are four primary areas within the legal field where there is scope for optimal utilization of AI. The first such area would be due diligence. AI can be trained to recognize concepts. This allows firms to contain costs, reduce risk and speed up the contract-review process. The procedure for using AI-powered document evaluation is straightforward[13] and reduces the workload and need for human resources in a law firm.

Prediction technology is the second primary area. By analysing past legal data, AI can provide insights into future outcomes through predictive analytics. For instance, AI could forecast a judge's holding in litigation. A few AI teams are developing machine learning models to anticipate the outcomes of pending cases, using the corpus of relevant precedent and the facts of the case as inputs. As these forecasts become more precise, they'll have a significant impact on legal practice.[14]

Another area within the legal field is Legal analytics. By making use of machine learning, legal analytics solutions can plow through vast legal databases to provide transparency. Legal analytics is the process of incorporating data into decision making on topics affecting law firms and lawyers, such as matter forecasting, legal strategy, and resource management. When used appropriately, legal analytics provides a competitive advantage by providing unparalleled transparency and insight into in-house counsel members, departments, and decision-makers.[15]

The final primary area to play to AI's strength is Practice management. All lawyers must do more in less time. Tools handle repetitive work through automation and reduce the workload.

Positive impacts of AI on legal profession:

AI has been having an augmenting amount of significance in all fields and professions. Susskind had argued around two decades ago that AI will definitely impact the legal profession as well. AI provides celerity, simplicity, and effectiveness in solving a multitude of legal problems by researchers. The ability to process data faster and cheaper leads to changing cost structures. More automation reduces transaction costs dramatically while it also makes impressive feats in the efficiency of its tasks. By applying knowledge to find a solution to legal problems, AI applications assist in legal reasoning.

AI is also used vastly in dispute resolutions, digital forensics and forensic anthropology. It offers an improved ability to monitor and document war crimes and human rights abuses.

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[12] Dr. Inderpreet Kaur and (Late) Mr. Chander Gopal Puri, Impact of Artificial Intelligence on Legal Industry, https://www.ijlmh.com/paper/impact-of-artificial-intelligence-on-legal-industry / (last visited Oct 18, 2022).

[13] Lyle Solomon, The advantages and disadvantages of AI in law firms, https://venturebeat.com/datadecisionmakers/the-advantages-and-disadvantages-of-ai-in-law-firms/ (last visited Oct 18, 2022).

[14] Sanjana Shikhar, Role of artificial intelligence in law, https://blog.ipleaders.in/role-of-artificial-intelligence-in-law/#Application_of_artificial_intelligence_in_the_legal_world (last visited Oct 18, 2022).

[15] Carissa Tham, Legal Analytics: Definition, Tools, and Applications, https://www.clio.com/blog/legal-analytics/ (last visited Oct 18, 2022).

In the article 'Black Box Tinkering'[16] published in 2017, AI was presumed to assist judges in the due course of adjudication in the future. Courts are already utilizing AI in making judicial decisions. Acquiring legal representation differs in various countries and can be a tedious, lengthy and costly process. Robots are also providing the possibility to increase productivity automation and outperform humans.

AI, contrary to the popular contention, does not threaten attorneys. In fact, attorneys aided by AI become more efficient in research and serve a wider range of clients on a broader range of issues. If anything, legal AI is allowing lawyers to perform more work, with less effort, and more money. It is widely helpful to law firms as well. Law firms with the input of AI, have better information retrieval quality, are intuitive to use, require little training, and will drastically cut working hours. This enabled firms to abstain from hiring many associates and spend less time on research, which freed associates for other substantive activities by automating legal grunt work

Legal AI tools Impacting Research in the Legal Profession:

Legal work can be exhausting as it involves combing through piles of information to find precedence. AI can make this work easy, as it can crunch data in minutes to find the relevant reference.[17]

There are several legal AI tools that bring to the table a variety of benefits. The most employed tools are discussed in this section. Legal Text Analytics Tool is used to extract meaning from court decisions or laws. Legal Question and Answer tools used to search large text collections to answer a user's legal question. Legal Prediction Tools are used to predict the outcomes of a court case by reference to earlier decisions. Contract Review and Analysis tools are used to acquire knowledge and use it at the 'clause level' to review a document. E-discovery (Technology Assisted Review) tools help legal teams with document management and review.

AI also extends to areas that aren't confined to legal research. Drafting Tools offer an automated document assembly system. Citation Tools provide citation format and support in legal research. Litigation Analytics comb through a vast amount of historical data, and help attorneys plan a strategy. Lawyers through litigation analytics can use data points from past case law, win/loss rates and a judge's history to study trends and patterns.[18]

Scholars predict that the top legal professionals will integrate these tools so seamlessly that they will no longer think of it as "adopting AI",[19] that it will become a practice of second nature in the near future.

Negative impacts of AI on legal profession:

The AI is proving to be an asset in not just the field of legal education and research, but in every field of human venture. Irrespective of how proficient the AI system is, AI cannot read legal texts like lawyers can.

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[16] Maayan Perel and Niva Elkin-Koren, 'Black Box Tinkering: Beyond Disclosure in Algorithmic Enforcement' 69 (1) Florida Law Review 2017 < https://scholarship.law.ufl.edu/flr/vol69/iss1/5/ > last visited October 18, 2022.

[17] Meenal Sharma, 8 AI-Powered Tools For Legal Professionals, https://analyticsindiamag.com/8-ai-powered-tools-for-legal-professionals/ (last visited Oct 18, 2022).

[18] Daniel Faggella, AI in Law and Legal Practice – A Comprehensive View of 35 Current Applications, https://emerj.com/ai-sector-overviews/ai-in-law-legal-practice-current-applications/ (last visited Oct 18, 2022).

[19] Gary Sangha, 5 Brilliant AI Legal Operations Tools for 2022, https://www.lexcheck.com/resources/5-brilliant-ai-legal-operations-tools-for-2021-lc (last visited Oct 18, 2022).

The Question-and-Answer systems do not understand legal reasoning. In fact, the majority of AI tools cannot work with total independence from human support.

They definitely need some sort of a human aid to work promptly. And this brings in another lacuna that is the lack of knowledge engineers, the lack of domain experts, the lack of existing methodology to be used by designers for the development of expert systems in the legal area, the lack of adequate AI tools, difficulties in quality control of legal AI systems, and the concerning legal implications of AI tools also hurdle the use of AI.

A consensus has emerged that AI will significantly disrupt the legal market[20]. This includes the problems of complexity, the worrisome increasing autonomy, the problem of opacity in decision making, and the technological vulnerability of AI systems, the lack of adequate market for legal AI (economic constraints), and the significantly slow culture of legal practice (cultural constraints) to integrate with AI.

Another important question that has not yet been answered is with regards to the accountability for the mistakes committed by the AI systems. The question is always left unanswered.

Moreover, AI is not immune from the bias and prejudice of its creators. Thus, it cannot always be trusted to be fair and neutral. It becomes more problematic when AI is used to replace human judgment, especially in the criminal law context. AI is not ready for this for a number of reasons. For one, there may exist bias in the training data which will be amplified and further institutionalized.

There is also the due process problem of lack of transparency and ability of explanation with using AI. In the present framework available for researchers, one cannot cross-examine a deep learning artificial neural network.

Results of the study on attorneys and AI conducted by the National Legal Research Group:

According to a study conducted by the attorneys of the National Legal Research Group, Inc., on the "The real impact of using artificial intelligence in legal research"[21], the following results were deducted:

It was found that the attorneys who used AI tools for legal research finished projects 24.5% faster than attorneys adopting the traditional research methods.

Moreover, the ones who used AI tools reported that their results were 21% more relevant than those who did traditional research.

And 45% of the attorneys who used AI tools believed that they would have missed a critical precedent if they had used traditional research.

Once they have used the AI, then, 75% of the attorneys who used AI tools preferred it over traditional legal research.

The researchers predicted that AI tools would save the average attorney 132 to 210 hours per year which is yet another evidence showing the effective use of AI in legal research and education.

Conclusion:

Thus, the legal services market is one of the world's largest, with a global value of almost $1T. At the same time, it remains under digitized. For better or worse, the legal profession is tradition-bound,

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[20] A Primer on Using Artificial Intelligence in the Legal Profession - Harvard Journal of Law & Technology (last visited October 18,2022).

[21] The-Real-Impact-of-Using-Artificial-Intelligence-in-Legal-Research-FINAL2.pdf (lawnext.com) (last visited October 18, 2022).

notoriously slow to accept new technologies and lawyers are still at ease with and depending on solutions developed years ago.

In the future, with the advent of Strong AI, which has a massive computational and analytical capacity of a vast amount of data and brute force of processing, the impact of AI on legal research will be far greater than mere automation (pre-programmed decision making). According to Deloitte, about 100,000 legal sector jobs are likely to be automated in the next twenty years[22].

Adding on to this, the AI tools are expected to deliver efficient legal services by autonomously undertaking legal research that is destined to sort out legal problems that will require human empathy, judgment, and creativity and thereby satisfy client expectations.

Despite all these, there is a wrong assumption among the lawyers and Law Firms that Artificial Intelligence or Machine Learning is a threat to their existence, or put simply, that Artificial Intelligence is going to replace Lawyers. The evidence, from other industries and verticals such as e-commerce, healthcare and accounting are that AI will only enable lawyers and law firms to do more with less, to become way more productive than their predecessors.

So, the use of AI is definitely a bone to the field of legal education and research.

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[22]https://www.legaltechnology.com/latest-news/deloitte-insight-100000-legal-roles-to-be-automated/ (last visited October 18, 2022).