COLUMNS

Artificial Intelligence In Aid Of Judiciary

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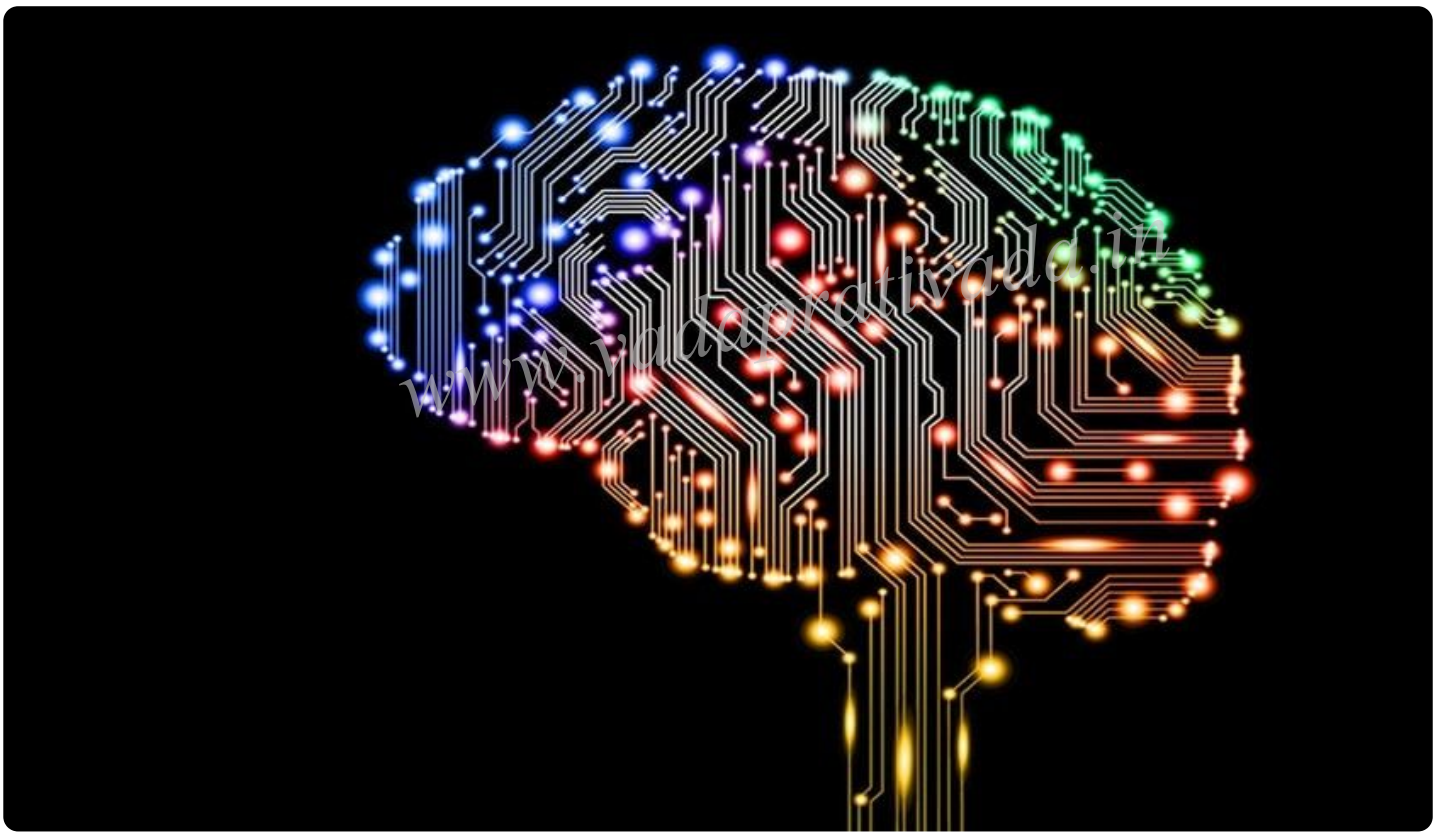

A conversation on Artificial Intelligence and how it can enhance the capabilities of our overburdened judiciary was the impetus for an Advocate and a Data Scientist for writing this article.

The conversation in Q&A form:

Q: Can AI be used to pronounce judgements instead of a human?

Q: Don't feelings create bias in the eyes of the judge?

Ans: The judges are trained to look at facts without bias and feelings

Q: Then how can AI help?

Ans: It can work faster than the human, sometimes

The constant drum beat from Influencers in the world of AI in the recent past has been that machines will take over from humans soon. In the times in which we are currently living in, with social distance being the norm and work from home safer than working in the office, we believe that the machine-driven future may indeed arrive faster than expected. In some areas, the changes will be rapid while in others the changes will be slow, but the beginning has been made.

AI (Artificial Intelligence) is a generic term that is used to describe the ability of computers to use artificial neurons. Modelled on the evolutionary human neuron, artificial neurons are used to build complex neural networks that do the job of intelligently processing large volumes of data and can be applied in multiple areas such as image processing, building recommendation engines for shopping or movies, predicting if loan accounts can turn into NPAs, forensic audits for suspected money laundering, in Natural Language Understanding to analyse text.

In the context of dispensation of justice, the most relevant use of AI would be using Natural Language Understanding.

What is Natural Language Understanding?

In simple terms it is the ability to teach computers to comprehend human language. This is done by "training" computers on a large corpus of text using various algorithms. Natural Language Understanding can then be used to build tools for text summarization, question and answering and in developing information retrieval-conversational agents.

The Mathematics of words.

Sounds like an oxymoron, but the fact is computers despite using artificial neurons do not understand words the way we do. They understand only numbers in the form of matrices and vectors. The question that comes to everyone is. "How do computers really comprehend human language with numbers?"

That is the beauty of Mathematics in Natural Language Understanding. The mathematical models using neural networks convert text (text can be words and sentences), to numbers and process them. These complex neural networks are designed to work on extremely high end computer processors that run on the cloud to decode the semantic and syntactic meaning of the words and sentences. These trained models can then be applied to downstream tasks such as text summarization, question-answering, information retrieval-conversational agents and this is called Transfer Learning.

There are two ways to apply the models to the task we have on hand. One way is to use the pre-trained models (for example models that may have been trained on Wikipedia) and apply them with minimal changes or to train the models from scratch. The latter option is more challenging than the former and requires an excellent understanding of mathematics, programming and most importantly the domain.

The process of language evolution in humans is truly fascinating. In the book, The Language Instinct, Steven Pinker talks in depth about the evolution of language in a child and goes on to explain the many ways in which the human brain processes language. Sometimes, even for the Wren and Martin trained, grammar enthusiasts language can pose significant challenges. An oft quoted example is by Professor Noam Chomsky, the noted linguist. He came up with the now famous line - Colourless Green Ideas Sleep Furiously. This is an example of a grammatically correct sentence but with no obvious meaning.

With the challenges that language throws at us constantly, mathematics and computers are doing a commendable job of trying to understand the human language and process in a manner that the learnings can be applied to tasks that involve contract management, retrieving information from a repository, answering users questions based on judgements, summarizing a case history without losing valuable information.

How can Judiciary benefit?

Digitization is the first step towards taking a leap of faith in AI. The process of digitisation of court records has already commenced in India and in a matter of few years the entire judicial records may be digitised. Whether the records being digitised are in a machine readable format or only for convenience of preserving and transmitting records is to be seen. For technology to play more meaningful role in Judiciary the case records need to be kept in a machine readable format. It would be prudent that all new cases being filed are kept In a machine readable universal standardised formats, which would enable introducing AI into our courts in a more constructive manner.

As for now the judgments of Constitutional courts are all available in digital formats and even old judgments can be made machine readable.

The judgements of constitutional courts which are binding on the lower courts can also be processed using AI in order to give a summary on any given principle of law, with references to the judgements on the point. This would enable the Judges in the lower judiciary to be certain about the legal position as settled by the Constitutional Courts and apply the same in the facts of the case before them. Once the legal principles are understood and applied consistently the need for superior courts to interfere with the judgments of the lower courts would become minimal.

Similarly, where large volumes of documentary and oral evidence is brought on record the same in so far as possible may be kept in a machine readable format. A well trained AI algorithm would be a reliable tool in the hands of the trial judges in highlighting the summary of the documents and oral

evidence. It would greatly enhance the capability of the trial judges in adjudicating complex matters involving voluminous records efficiently.

The object of judicial process is to pursue and find truth in rival claims as is reflected from the guiding principle of High Courts –'Satyameva Jayate' i.e., Let truth be victorious.

Hence, truth has to be ascertained by courts on the basis of Rules of Procedure, Law of Evidence and Substantive Law governing the subject matter of dispute. The above 3 can be made part of a large judicial data base and AI algorithms can be trained to give accurate results in applying the above in a given factual scenario.

Law in most of the branches of law has been interpreted by Supreme Court and High Courts over the past 7 decades and has now attained certain element of certainty. However, in application of the law various views are also a reality which co-exist due to various special facts which are unique to the cases being adjudicated upon.

It is therefore that human Judges cannot be replaced with AI to adjudicate on issues, but be best used as tools to prepare a summary of law on the subject highlighting nuanced differences in divergent views. It would still need a trained judicial mind to apply the law to a given set of facts. For eg. a case of condonation of delay cannot be decided merely on precedents, for peculiar facts of the case need to be appreciated, which cannot be expected from a trained AI program. A trained legal mind with human emotional intelligence is much superior to a AI program which runs on the basis of a set of instructions.

With the experience of the authors in field of law and AI we can confidently say that AI should not try to replace the human judge but build intelligent AI assistants that can help the judge with access to relevant information from huge data spread over voluminous records without providing any recommendations.

The question that would arise, sooner or later is this - Are we ready to replace Judges with AI driven programs to deliver judgments? With proper legal grooming and adequate data being made available it may be possible. But the question that would arise is do we need a human element in adjudication process or can it be left to machines?

In our opinion AI can be a great tool in the hands of judges but cannot replace the human touch which is essential for justice to be done and seem to have been done as well. As a tool AI can prepare a summary of law on a given proposition by reading through all the judgments on a given point of law. But for the law to be dynamic and to keep abreast with the changing times it must be handheld and guided by legally trained human judges.

Views Are Personal Only

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