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Indian Strategy for AI & Law, 2020

#AIforNewIndia

Preliminary Recommendations
March 2020

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**INDIAN
SOCIETY OF
ARTIFICIAL
INTELLIGENCE &
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About

The Indian Strategy on AI and Law (ISA) is our policy project under the Indian Society of Artificial Intelligence and Law, where we intend to enlighten and discover various avenues of AI Ethics and Law in its multidisciplinary content, and devise solutions for the Indian Economy through policy recommendations, internship programmes and academic conferences.

The Executive Council of the Indian Society of Artificial Intelligence & Law has mandated the production of the Indian Strategy on AI and Law (ISA), 2020, which we intend to submit to various stakeholders in the AI Ethics and Law ecosystem present in India, which includes various state and non-state actors.

We hope that by **December 2020**, we come up with a comprehensive policy draft that guides for a vibrant and intelligible New India!

Thank you.



**Abhivardhan
Chairperson &
Managing Trustee**

Areas of Research under Recommendation

- AI, Economics & Development: Innovation & Welfare Mechanisms
Adetola Jesulayomi, **Research Intern**
- AI, Economics & Development: Machine Learning & Behavioral Economics
Ruhi Tyagi & Trishla Parihar, **Research Interns**
- AI & Constitutional Law: E-Courts & AI in India
Kshitij Naik, **Research Intern**
- AI & Intellectual Property Law: AI, Creativity & Innovation Ethics
Urvashi Arora, **Research Intern**
- AI & Constitutional Law: Privacy Jurisprudence and Modalities of Artificial Intelligence
Ritansha Lakshmi, **Research Intern**

AI, Economics & Development: Innovation & Welfare Mechanisms

Adetola Jesulayomi
Research Intern

AI has a special relationship with the policy and politics of development and its economics. Considering the Indian scenario, we believe it is important and never too late to work and emphasize solutions in the due areas related to Developmental Economics, Entrepreneurial Ethics & AI.

Recommendations

- The world is being changed in unprecedented ways by Artificial Intelligence and this is redefining every field of human behaviour. Economics, which has been very resistant to the adoption of AI is being braced to undergo dramatic upheavals since its inception by Adam Smith, which will thereby help humanity better solve its problems.
- The results of the simulation of AI's gross and net effect on GDP and labor markets show that there is a high possibility for AI to add around 16 percent to global output by 2030, or about \$13 trillion, compared with today. This simulation is a combination of a large increase of 26 percent in GDP growth driven by AI, and costs related to the transition to these technologies (for instance, labor displacement) and their implementation (for example, the deployment of AI solutions), as well as negative externalities for the baseline of economic activity (such as loss of consumption during unemployment). Together these elements may produce an annual average net contribution of about 1.2 percent of activity growth between now and 2030.
- Recently, research has shown that the introduction of robots in manufacturing and the introduction of IT accounted for 0.4 percent and 0.6 percent in annual productivity increases, respectively. Recent estimates put the productivity impact of technologies and early digital technologies such as broadband at 0.6 percent annually during the 2000s. AI may contribute to progress toward meeting the United Nations' SDGs.
- This suggests that innovation can contribute about 7 percent leading to a possible \$6 trillion increase by 2030, incremental to today's output. Consider how ICT was the foundation of the internet economy that is now reshaping retail, transportation, and media industries.

Recommendations

- **By the development of a road transportation system, it can be clearly seen that AI is bound to have such a transformative impact. AI is disintegrating business models, for instance, we now have chat bots, driverless cars, drones etc. This " Artificial Intelligence" is altering how we now live and go about our daily business.**
- **This is an era of remodeling, where the advent of AI companies and its solutions will contribute greatly to an increase in global economic growth and productivity.**
- **The next probable question to ask is how will AI change the different industries with the recent technological innovations that will shape the world and greatly increase the economies of the world. This question is answered here; Driving supply chain and logistics operations. AI can minimize cost through improved forecasting, quick deliveries through optimized routes, improved customer service, and more.**
- **Finance industry would benefit with most precise analysis for a myriad of its purposes. As far as AI and ML are concerned, the finance sector would benefit from these technologies with the ability to detect fraudulent transactions and make way for a safer and secure online transaction. It can also analyze market patterns, trends and the rise and fall of stocks values in the market to help financial advisers create customize plans.**
- **Chatbots are now very sophisticated to the point that they have become indistinguishable from humans. Inquiries are being responded to instantly, increased engagements with customers, reduced service time, and the ability to handle simple transactions, are within the grasp of these bots. By 2020, chatbots will power 85% of all customer service interactions.**

Recommendations

- **One major reason for the accelerated growth of AI is the opportunities for economic growth that it presents. Now, automated systems can detect a worker's inefficiencies, one which a human manager may never discover. But for these workers, the inefficiencies to an automated system were their moment of respite, thus making these jobs very stressful and dangerous and human beings can't sustain such strain without breaking down.**
- **Buzzfeed, ProPublica and others investigated Amazon delivery drivers and it was revealed that most of these drivers sustained serious injuries which is more than twice the national average for such similar work.**
- **Backaches, knee pain and other such symptoms of constant sprain are common among workers at Amazon, which is enough to install painkiller vending machines in its warehouses. Additionally, Amazon has patented a tracking waistband that jerks to direct its workers. Also, Walmart is currently testing harnesses that monitor the motions of its warehouse staff. Just imagine a future where you have to choose between starving or wearing something that zaps you when you work too slowly. All in the name of making humans more efficient.**
- **The pace of work is only one form of the bigger question, AI will force us to confront; when do we strike a balance between efficiency and human autonomy occur?**

AI, Economics & Development: Machine Learning & Behavioral Economics

Ruhi Tyagi
Research Intern

Trishla Parihar
Research Intern

AI has a special relationship with the policy and politics of development and its economics. Considering the Indian scenario, we believe it is important and never too late to work and emphasize solutions in the due areas related to Developmental Economics, Entrepreneurial Ethics & AI.

Recommendations

- **AI has the potential to "change the world". Various machine learning algorithms viz. OpenAI's GPT2 language model is used to predict text. Although it takes enormous data and months to get trained once it's ready, it's easy to use. Thanks to the supercomputers available having gigantic processing and decision making power compared to Homo sapiens.**
- **Machine learning has been a boon to the business world with a plethora of benefits. To mention some simple instances: 'Spam' detection by Gmail; where it recognises certain word patterns to filter messages and 'Face' tag in the photographs uploaded on Facebook; where it uses face recognition to do so. Not only that, it can assist in creating special offers, forecast sales, reduce data redundancy and so on.**
- **Diagnosing cancerous cell in a person's body has greatly helped the doctors to assist their patients with required treatment with the help of ML. But why just detection? Answering that, now teams of scientists and researchers are working on how the cells are produced studying various lifestyle, demographic, climatic, hereditary and other factors to cut short the suffering.**
- **The shopping experience has been better than ever before. To illustrate, Amazon's smart bots study the previous orders, recent searches and create pop-ups to advertise and suggest the products on is highly likely to consume. Not only this benefits the consumer but producers are benefitted too by giving enticing offers knowing the behavioural economics behind it.**

Recommendations

- It has been a debated issue whether robot rights are really important to be considered as human or animal rights are? Can robots be biased sometimes and give out the wrong outputs? What if they harm humans and control the world?
- However, there have been many instances where robot rights are considered equivalent to other living creatures. For Example, Sophia the Robot, developed by Hanson Robotics was given citizenship of Saudi Arabia which many disagreed with it concluding it as denigrating human rights and laws while others thought of it as meaningful legal recognition.
- There can be times when AI is supposed to go wrong as it studies the human decision patterns and carries out further future decisions considering the training data. These are the times when AI Ethics need to step up. If there is a manual eye on each process and results (which is realistically unachievable), that could provide justice to humanity.
- Joseph Weizenbaum, the father of modern Artificial Intelligence, suggests the professions which require care and respect shouldn't be replaced by AI technology; a nurse for elderly, soldier, police officer, customer care representative, therapist and judge.
- He supports his argument saying that if robots are given the rights to above empathy-based occupations, humans may find themselves alienated, devalued and frustrated.
- In closure, it is highly integral to have supported the human and planetary rights before any technological enhancements. Recently, IBM and Microsoft have come ahead to support the Vatican's ethical guidelines. Even, Facebook backed out of an independent AI research as well as Google has formed an external council to guide development and use.

Recommendations

- Therefore, if things seemed to run the way they are with progress and its user guide, the future does not seem to be as detrimental as predicted by many researchers and seldom by the cinematic world also.
- In India, the AI functioning is based on data analysis, data programming, data statistics. India has focused on artificial intelligence with the program initiative called National Strategy on AI by the NITI Aayog, the Union Government's think-tank, to develop and research AI and announced hackathon. The NITI Aayog in collaboration with Observer Research Foundation in November 2019, in Mumbai announced a Hackathon in partnership with Perlin, a Singapore based Company.
- A case of deepfakes happened in the Delhi Assembly Elections in February 2020 by manipulating and fabricating audio-visual content to make it seem real. According to VICE News, the IT Cell of the BJP, Delhi (as alleged) partnered with a political communications firm, The Ideaz Factory, to create "positive campaigns" to reach different linguistic voter bases, it marked the debut of deepfakes in election campaigns in India.
- Even as per the statements by Sh. Amit Shah, Minister for Home Affairs, Government of India, facial recognition technology is being used with the help of government data to figure out the culprits involved in the violence that happened in the regions of North-East Delhi. As per the statements, the data sent to the state agencies are being monitored and analysed to estimate the culprits behind the acts of violence.
- The Owensboro Police Department in the US implemented its Unmanned Aerial Vehicle (UAV) Team first time in January 2020. They encouraged an increase in the manpower of UAVs so that police forces would be able to keep a check on the fatal accidents and avoid other internal boundary risks.

AI & Constitutional Law: E-Courts & AI in India

**Kshitij Naik
Research Intern**

A transparent, people-centric judicial system, which is comprehended by technologies to advance public interests in a more perfect and justified way is the only means to achieve the purpose of a technocratic and transparent judicial governance in India. Although the aim is not clear and it has many ramifications, we hope to advance options to innovate and provide better academic solutions.

Dr Pankaj K Goswami, the Executive President is the Lead Supervisor for the Researchers involved in the academic area.

Recommendations

- **As on June 1, 58,669 cases were pending in the Supreme Court, more than 43 lakh cases are pending in the 25 high courts in the country. and over 8 lakh of these are over a decade old, according to a written reply by Ravi Shankar Prasad the Law Minister of India What we realise from this is that the Government of India needs to develop solutions to help solve Judicial Matters expeditiously and develop solutions that reduce the number of cases that end up at the Court. This could be achieved by innovating the way Indian Judicial System works.**
- **Automation in Document Reviewing with the help of AI has extensive benefits for the Judicial System, automating the document reviewing process will help the Judges to selectively read only the information that is relevant on that particular date for that particular case, which will, in turn, reduce the time taken by the Judge in reading the whole file and Irrelevant material so that the Judge can concentrate on matters that are of much more importance. Such solutions can be developed for the Judges that help them understand at an instant whether a Judgement cited by a counsel has been overruled or is relevant to the present case.**
- **The only solution to help reduce the pendency of cases in the courts is to make them technologically advanced and move ahead of the traditional way of delivering justice, this could be achieved by developing solutions to keep a log of the proceedings in the courtroom and the decisions taken Judge Similar to the Traditional 'summary of proceedings' which are done manually, but one that will include even more details such as the time taken by both the parties in a Particular Case, the number of cases closed by the judge on a daily, weekly and Monthly biases, such solutions will help the Government as well as Public keep up to date about the Cases and will also decrease corruption.**

Recommendations

- **AI-powered tools that will keep a log of Court Proceedings will also help judges to decide whether to post a particular Case for hearing on a particular date and decide if they will have the time to hear that case on a particular day according to the predictions made by the tool based on the average time taken to be heard by each case posted on that particular date, which will, in turn, increase the Judges efficiency in hearing and deciding cases.**
- **Such Tools will help the Government Analyze the Courts performance and if it is not performing as expected to find solutions to increase its Performance**
- **The major reason for the pendency of Cases is the number of cases that are filed in the District Court, High Court and the Supreme Court is increasing each year by developing 'Predictive Justice' instruments. This Could be achieved by AI-Powered online tools for dispute resolution that help give the best solution for the Case by analysing the Case by itself and comparing it with the database available with it, this will not only reduce the number of cases filed in the courts, and also make Justice more approachable and inexpensive for the common people.**
- **There are various instances when the Court has to hire a translator for the Case at documents are in a different language or the witness that appear before the court speak a different language this could increase the Cost in that particular matter and appointing a translator in the court is a lengthy process this could be totally eliminated by providing the court with Natural Language Processing solutions that will take out any human intervention at all.**

Recommendations

- **Humans, at times we tend to have a bias towards a particular party and Judges are humans as well. Bias is a major cause of concern for Arbitration Cases in India and all around the world whereas Arbitration is the most sought after form of alternative dispute resolution. AI can be used in Arbitration matters which can help predict or come up with the fairest solution for the particular matter even if we don't rely totally on AI-powered Tools in Arbitration they will help the Arbitrator decide what would be the best possible solution.**
- **A central Database can be developed by the Government of all its citizens which may include all their identification details Like Adhar, PAN, Driving Licence in one database as well as details regarding their birth residence their Criminal Record. Such Database will help Courts much more efficiently on Cases before it as the Tools that they have will access this database and suggest probabilities regarding the particular case. Developing and maintaining a Central Database can be revolutionary in Legal Administration as well as Law Enforcement.**

AI & Intellectual Property Law: AI, Creativity & Innovation Ethics

**Urvashi Arora
Research Intern**

Intellectual Property Law is important and integral to the juxtaposition of the legal entitlement of AI in a polity. It is therefore required to understand to provide relevant solutions in the paradigm of utmost requirement to expand the horizons of AI and IPR.

Mr Abhinav Misra, Member of the Advisory Council is the lead in the area of AI & IPR in the organization.

Recommendations

- **Artificial intelligence is one of the most complex and modern discoveries in the world. The idea of relating advanced technology like artificial intelligence with intellectual property rights can be quite challenging. Many countries are still facing obstacles in order to resolve the complexity between two industries, which includes laying out a more feasible legal solution. The need for providing relevant solutions in the context of artificial intelligence and copyright law the utmost requirement for future growth and prosperity, thus, developing an innovative and ideal world.**
- **The world intellectual property organization (WIPO), has performed various surveys and country-based analysis on the impact of copyright on AI and its impact on the economy. It has been clearly observed that providing patents to non – human entities in the field of artificial intelligence can lead to a boost in the economy and give an effective platform for more inventors to widen their horizons. As of now, India does not provide patents to the inventor of any AI software. This legal notion could be reconsidered in order to make sure that no individual or novel cases are left without any clarity.**
- **Another key aspect to understand is whether the Indian legal system is providing a proper layout in order to deal with the complexities of both the industries. There is a need to provide a proper judgment on 'computer-generated works' and its role in authorship. Countries like Spain and Germany have clear and distinct laws on AI and Intellectual property rights which help them to minimize their interlinked problems and then work for attaining a legal and just solution.**

Recommendations

- **Countries like Japan, which is considered as one of the fastest moving economies has been applying the strategy for granting Artificial Intelligence programmer copyright for the concerned AI software which will increase or has a positive impact on the country's economy. This strategy can also be used by India, in order to gain a positive result in the economy.**
- **A proper standard must be laid down by the legislation in the context of eligibility of artificial intelligence software or computer-generated work in order to provide patent for the same. This will ease down the processing of courts and judgments and will help in resolving issues as fast as possible.**
- **The use of the Abstraction-Filtration-Comparison test can be implemented in order to ensure that the infringement of the copyright has not occurred. Here the experts discuss two kinds of copying: literal copying and non-literal copying. They use certain tools in order to identify the codes which have been copied. If it is unable to find out through literal copying, then experts shift to non-literal copying. Here they observe the non-literal parts of the concerned software like the way it feels or its structure and sequence. This is known as the Abstraction-Filtration-Comparison test.**

AI & Constitutional Law: Privacy Jurisprudence and Modalities of Artificial Intelligence

Ritansha Lakshmi
Research Intern

A transparent, people-centric judicial system, which is comprehended by technologies to advance public interests in a more perfect and justified way is the only means to achieve the purpose of a technocratic and transparent judicial governance in India. Although the aim is not clear and it has many ramifications, we hope to advance options to innovate and provide better academic solutions.

Dr Pankaj K Goswami, the Executive President is the Lead Supervisor for the Researchers involved in the academic area.

Recommendations

- **Given the foreseeable inescapability of artificial intelligence (AI) in modern societies, it is legitimate and necessary to incorporate this technology to support the maintenance and strengthening of the constitutional democracy of our country. With the advent of rapid invasion of AI in different areas, it parallelly put a light on growing concern about its ethical and legal aspects, as traditional foundations of constitutional governance face administrative challenges.**
- **India being in a nascent stage in developing technological skill to fully implement AI solutions for law enforcement purposes and many projects are still at the stage of conceptualization. Simultaneously, India is also developing projects that will allow the infrastructure and data necessary to fuel AI solutions in the law enforcement sector.**
- **There is great potential for the advancement of Artificial Intelligence in the governance space in India. But socio-economic, technological and regulating realities in India pose unique challenges which need to be recognized and addressed while framing policy and implementing the AI technology. With the increasing use of the AI in high-risk areas, the pressure is on the government to design and govern AI that is to be transparent, impartial and reasonable.**
- **As per NITI Aayog's policy, 2018 which is called "AI strategy approach #AIforAll". It aimed at**
 1. **Enhancing and empowering young Indians with the skills to find quality jobs;**
 2. **Investing in research areas and sectors that have the potential to maximize economic development and impact the society; and**
 3. **Scaling Indian-made AI solutions to the rest of the AI developing world.**

Recommendations

- In this discussion paper, there are many aspects of AI which have been discussed but there're no clear-cut methods and mechanism given on how it should be implemented.
- Big data and predictive analytics are the keystones for analysing multiple types of data and its sources to predict and can be used to stop crimes before happening.
 - Integrate CCTV footage with social media applications and data collected in the control room.
 - Anticipate criminal intent through the use of sophisticated technologies and data-mining.
 - Setting up cyber-crime labs in the state to enable speedy registration and enable forensic investigation.
 - Improved and sophisticated data collection techniques are a mandatory prerequisite for running predictive policing programmes.
- ISRO had built a software called CMAPS (Crime Mapping Analytics and Predictive System), which is now being used by the Delhi police. Using this analytical software Delhi police ensures internal security, controlling crime, and maintaining law and order through analysis of data and patterns.
- The government must encourage public to trust and have confidence in AI technologies and at the same time protect civil liberties, privacy, and human values in their application to fully utilize the benefits of AI for citizens. AI should also be formulated and operated to keep in mind with ideals of human dignity, their rights, and cultural diversity of our country.

Recommendations

- **AI should work following the well-being of human, its societies, and cultural diversity of own country.**
- **AI should be made transparent to the public.**
- **Manufacturers and operators of AI should be responsible and liable.**
- **There should be a codified norm for AI to protect citizens rights and keep a check on the evil use of AI.**
- **India should focus on Shared Benefit (benefit and empower as many people as possible). Shared Prosperity (The profit gained by AI should be shared, to benefit all of the people of our country) and Security of our country (recognising the need for AI to be safe and acknowledge their accountability).**
- **Accountability and Social Responsibility is also important, the Government of India must keep an eye on the performance and impact of AI technologies they have researched and developed.**
- **Communication with society and its development must aim to improve understanding and aware societies about AI.**
- **AI must abide by ethics guidelines and must be regulated through law.**
- **AI operators should have proper competencies.**
- **Increasing interest in AI can be seen from the last few years. It is recommended that there should be a need for Data science courses focusing on the core element of AI development and Ethics.**
- **The right to receive education or access information on new technologies and their ethical implications will facilitate that everyone understands risks and opportunities and is empowered to participate in decisional processes that crucially shape our future.**

Recommendations

- **The government needs to ensure that the software developer in the private sector abides by the constitutional standards of due process, in the absence of a legal framework, shareholders strive towards carrying out measures that would defend them from unforeseen penalties and liabilities that may arise in the course of use and implementation of AI technology.**
- **There is a requirement to amend the IPR law and incorporate the status of AI-generated work under it. Till now IP right is the incentive for the creators who create creative, original and useful work, IP right comes in various category like, Copyright, Patent, Industrial design etc. which was so far only eminent in the human domain. Since AI has started now creating music, article, create painting, design software etc. These activities meet almost all the criteria to get AI their IP right except the lacking legal personality.**
- **Copyright has been approved only to natural or legal persons and any machine or tool used for creating any creative work are only considered as a mere tool and thus have not been granted any copyright in the programs name. Recommendation to amend the Copyright Act 1957, to include AI-related works as a separate category or to give AI recognition to be an author.**
- **There should be strict rules about how privacy issues are to be dealt which includes a guideline to allowance, responsibility and specific laws.**
- **The need is for the organizations to understand - Is the law allowing the organizations to collect, store and process the data. What is the responsibility of the entity storing the data and the laws about whether or what kind of data can be collected, what should be stored and how the ownership of the data should be established?**

Recommendations

- **Data ownership:** As devices are continuously exchanging the data between themselves and tons of data is getting stored in different places, there are many stakeholders and partners involved in this. The clarity around ownership of data needs to be established and looked into very carefully.
- **The hegemony of the human race may soon decrease to a certain level with the rise of dependency on AI technologies. To prevent unwanted changes humans must have the ability to foresee law which must have the power to check any evil use of AI or to ensure that there must not be any negligence for a quick profit. AI is growing multi-fold technology and we do not know all the advantages or danger associated with it. Therefore, it is very important to have a double-layered protection model: first- technology regulators; and second- laws to regulate AI actions as well as for responsibility and liability of errors done by AI. As AI has the potential to impact the public at large so it has to be regulated and applied reasonably. The benefits are not discriminatory which is benefiting one particular section of people or causing harm to another section of people in the society.**

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