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INTELLECTUALIS

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DO YOU KNOW?

-Shefali Fernandes, 1750463 & Mohtashim Shariff, 1650317

- Google designed an AI that can guess what you are doodling before you finish. Each drawing makes the AI a smarter, better guesser.
- Wildbook scans and analyzes wildlife photos to provide more accurate wildlife censuses. The analysis helped the Kenyan government protect a species of Zebra from unusually high lion attacks.
- MIT scientists created an AI, Kismet, that can read emotions, and react with its own.
- Google's NSynth is making it possible for artists to create different kinds of music altogether. Google engineers fed thousands of different instruments' sounds into NSynth, and the AI can copy those sounds, or combine and alter them.
- Chatbots are AI programs that mimic human speech, and often do rote customer service work.
- 85% of customer interactions are thought to not require human customer service

(Source: https://www.mic.com/p/how-does-artificial-intelligence-work-what-do-people-mean-when-they-say-ai-19285576)

Artificial Intelligence in the Indian Scenario

- Ashwin Paul Abraham 1950105

Artificial Intelligence, or AI as it is most commonly known, is one of the most widely used terms in today's digital day and age. Experts in the field of science and technology have predicted that Artificial Intelligence will take over the world by the year 2050. As we enter a new decade, and technology progresses even faster, we see how technology has taken over so many of our day-to-day activities. Artificial Intelligence is commonly referred to by computer science experts as that which simulates human processes, but through the medium of computers. AI has been in the limelight for

- There has already been a robot that wrote an article on the earthquake in California for the Los Angeles Times. This is known as Robo-Journalism.
- Sony created a robotic dog called Aibo, one of its first toys that could be bought and played with. It could express emotions and could also recognise its owner.
- IBM has created a supercomputer based on AI, called Watson. The development is such that currently Watson is not only applied in various industries but was recently successful in teaching people how to cook.
- The credit for the term "Artificial Intelligence" goes to John McCarthy, a computer scientist and a cognitive scientism.
- In Greek mythology, the bronze automation Talos also known as Talon was made by Hephaestus, the Greek god of metallurgy and fire to protect the island of Crete from pirates and invaders. This is seen as an instance of artificial intelligence being used.
- Alan Turing developed the Turing test, a test of a machine's ability to exhibit intelligent behaviour equivalent to, or indistinguishable from, that of a human.

good as well as bad reasons with many fearing its negative implications, especially AI taking control of computer systems and hurting human interests. It is evident that there must be some sort of regulation of AI so that it works only for our good. It can be very easily said that one day, perhaps not in the distant future, AI will become part of our everyday life. It will help us to increase our economic growth or maybe find solutions to environmental and other problems that we face. However, the real question right now is whether AI will be able to provide accurate decisions which human beings will actually agree to carry out.

AI can have uses in the legal field as well. Today in the legal field with so many cases pending before both the Supreme Court as well as the High courts, AI can be used to speed up proceedings and give more time to the actual provision of justice without just manually glancing through and providing justice much to the dissatisfaction of the parties. The concept of having courts with AI has been debated and there have been instances of use but, legal scholars still believe that human courts would be much better and that there would be a fair trial. Artificial Intelligence has been debated for almost sixty years and several questions have been raised with regards to its proper functioning.

Hybrid systems, which use AI but still leave critical decisions to humans, are said to be very common when it comes to the functioning of AI. The Government of India has taken steps with regards to Artificial Intelligence by making the "National Strategy for Artificial Intelligence" in the year 2018.

WHAT'S NEW?

-M. Grisha Borges, 1750557

& Ankita Malik, 1750

- IEEE International Conference on Robot & Human Interactive Communication (RO-MAN) which was held in New Delhi (Dec.2019) was a departure from typical human-robot interaction studies. This has enormous implications for a world where the number of robots and Internet of Things (IoT) devices with artificial intelligence capabilities is expected to grow exponentially.
- A computer algorithm Alpha Zero learned, after just four hours on its own, to beat the best chess programs built on human expertise. Now a research group has used the very same algorithm to control a quantum computer.
- Artificial intelligence can be used to predict molecular wave functions and the electronic properties of molecules. This innovative AI method could be used to speed-up the design of drug molecules or new materials.
- Researchers developed a tool called Geneva (short for Genetic Evasion), which automatically learns to circumvent censorship. Tested in China, India and Kazakhstan, Geneva found dozens of ways to circumvent censorship by exploiting gaps in censors' logic and finding bugs.
- Samsung has developed AI avatars that are virtually indistinguishable from real humans, according to leaked footage of the firm's secretive Neon project.

Many of the Indian Institutes of Technology (IIT) today have courses on AI which makes the subject accessible to more and more students. India has today been compared unfavourably with China with regard to its works with AI. It shows how, as a country, India has lots to develop, even though significant progress is being made right now. AI work in India is said to have missed key elements which makes it impossible to make sure that AI could be implemented soon. India is said to have become a space power, while it is still experimenting on the fact of machine learning as well as Artificial Intelligence as a whole. Nevertheless, it is safe to say that India is progressing well on the way towards the achievement of AI and can do so if key structural points are implemented fast, especially in the business and the legal sector. Programmes and initiatives by the government could also help in the strengthening of AI which leads to boosting the strength of the country. Hopefully AI will bring about a change in the days to come and we can see a brighter and a more digitized India grow from strength to strength in the digital sector and help other sectors too.

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The Need for Intersectionality in the Development of AI

-Amala G, 1850340 & Lepakshi P Naik, 1850450

AI is rapidly changing the shape of society. It has found its application in healthcare, education, insurance and criminal justice reform to name a few. It has been lauded as a system that will be free from the biases and prejudices that inform human decision-making and be instrumental in bringing about an equitable and fair society. However, this is a flawed argument. This is because the computation process of AI replicates the existing power structures in society. Bias which finds its way into AI, carries a high-risk as it has the potential of putting certain populations at a severely disadvantageous position. It has been pointed out that the normative subject used in the designing of artificial agents are "usually constructed as white, male, and presumptively heterosexual, and therefore unproblematic and uncomplicated as a design option. Female and non-white identities are seen as potentially problematic". The identity markers of "white, male and heterosexual' hold more value and are reinforced in algorithmic systems. In a proprietary algorithm that was used to create criminal risk assessment, it was found that "the formula was particularly likely to falsely flag black defendants as future criminals, wrongly labelling them this way at almost twice the rate as white defendants. White defendants were mislabelled as low risk more often than black defendants". Therefore, the assumption that these systems will always make a decision on ground truth is wrong. The US Department of Homeland Security proposed the development of automated prediction system to decide on who was a "good/bad immigrant" that would draw the required information from social media profiles. After severe pushback, this idea was dropped as not being provided for by "present day capabilities".

Recently, Stanford University launched a new institute called the Institute for Human-Centered Artificial Intelligence in order to resolve the lack of diversity and intersectional thinking. This institute aims to raise funds to facilitate the work of professionals from fields such as humanities, education, business and so on. However, this move faced harsh criticism as it replicated the biases that already exist as out of the 121 faculty members selected by the AI, more than 100 were white and a majority of them were male. The solution to keeping the AI system free of such biases is by developing AI in a framework of intersectionality.

Intersectionality can be understood as the overlapping of disadvantages and discrimination due to different social positions owing to race, gender, class, religion and so on. For example, a black

woman faces the disadvantages of being both a woman and a black person. Such disadvantages are unique to her and are not faced either by white women or black men. Developing an intersectional framework means that the datasets that are collected by keeping in mind these overlapping disabilities. There need to be intersectional audits for any AI that is developed in order to ensure fairness, accountability and transparency. However, one crucial factor that must be implemented in the creation of an intersectionality-based model is that it is not adequate to merely represent marginalised groups in datasets in terms of an increase in numbers but to question and critique the way in which such social systems work and the impact that they have on life. It is not enough to simply add data to a neutral network in order to identify additional identities of groups of people. There is a recommendation made for the AI to use discourse and cultural theory from the affected parties themselves such as feminist groups.

If AI has any hope of fulfilling its promise as a democratic tool leading to unbiased and solutions to social problems, intersectionality becomes an absolutely critical ad indispensable criteria which it has to meet. Algorithmic audits that are non-intersectional in nature are inadequate in ensuring fairness. Further, algorithmic audits that operate on a single variable such as a race or gender are also not sufficient. Although these single-axis systems are a significant advance, there is a need for developing more thorough AI systems that capable of assimilating the various complex power structures that exist in society in its analysis and decision-making functions.

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- Chinese technology giant Baidu overtook Google and Microsoft in an AI competition designed to test how well a machine can understand human language. Baidu, achieved the highest ever score in the General Language Understanding Evaluation (Glue) – widely considered to be the benchmark for AI language understanding.
- Lee Se-dol from South Korea, A master of the ancient Chinese board game, lost to an AI algorithm called AlphaGo that had been programmed to play the game by Google's DeepMind in 2016. Despite being the only player to ever win a game against AlphaGo under tournament conditions, the match finished 4-1 in the computer program's favor.
- Transcribe Medical by Amazon is designed to transcribe medical speech for primary care. The feature is aware of medical speech in addition to standard conversational diction.
- Amazon's Sage Maker is a machine learning development platform and this new feature lets data scientists using Kubernetes train, tune, and deploy AI models.
- Amazon calls Deep Composer the "world's first" machine learning-enabled musical keyboard. The keyboard features 32-keys and two octaves, and is designed for developers to experiment with pre-trained or custom AI models.

Artificial Intelligence and the Evolving Society: A brief Analysis

- Lian Cicily Joseph, 1750255 & Sandra Elizabeth George, 1850558

'*Artificial intelligence (AI) is broad conceptual term for technologies or systems making it possible for computers to perform tasks involving human-like decision-making, intelligence, learned skills and/or expertise'*. Information and data collection and assimilation from the corner-stone of many businesses and enterprises. Our data has become commodified to the extent where the success of these firms rely on the free flow of information across the board. Companies like Facebook and Google hence rely on various forms of Artificial Intelligence to deal with the vast amount of data received. This can result in multiple consequences. This article will seek to broadly cover two primary issues- privacy violations and bias.

Many people are of the misconception that Artificial intelligence (AI) is a thing of the not-so-near future. But in fact, the advent of AI had begun long back. AI is very much present in the technologies we use now, from autocorrecting our text messages to showing us news of our interest, our lives are made a lot easier by AI. But like all good things, AI too has its issues. One of the main legal issue of AI is that it compromises a lot with our privacy. A huge amount of our personal data is procured by AI and a possibility of its misuse exists. Such data stored could even include sensitive matters like a person's religious view or political view which could be used against him. An example for information being used is the social credit ranking system of China. By 2020, everyone in China will be enrolled in a

- A new technology developed by Airbnb conducts background check and evaluates the users' reliability, compatibility, behavioural and personality traits. According to a report by the Evening Standard, the technology, which is a 'trait analyzing software', was built after the online lodging and homestay platform received complaints from hosts. In 2019, Airbnb's background check technology was revealed in a patent issued by the European Patent Office and published in the US.

- Elon Musk-founded 'OpenAI' has opened the doors of its "Safety Gym" designed to enhance the training of reinforcement learning agents. OpenAI describes Safety Gym as "a suite of environments and tools for measuring progress towards reinforcement learning agents that respect safety constraints while training.

- Canadian health monitoring platform 'BlueDot' using an AI-driven algorithm that scours foreign language news reports, animal and plant disease networks, and official proclamations to give its clients advance warning to avoid danger zones like Wuhan, sent the first warnings of Wuhan Virus. It uses airline ticketing data to predict the spread of diseases like those linked to the flu outbreak in China.

vast national database that compiles fiscal and government information, including minor traffic violations, and distils it into a single number ranking each citizen. Online intermediaries even control the information that reaches a user with the help of AI systems in a way that the user will never know. In such a situation it is not only the right to privacy of a person that is infringed but also the right of freedom of expression and freedom of choice. People are always being tracked and their activities continuously monitored. Loss of privacy is a sure consequence of AI. As we have entered into a new era of AI and technology, the existing laws might seem inadequate to regulate such privacy issues created by AI. India is working towards improving this situation by bringing in the Personal Data Protection Bill (2018). A right balance must be struck between innovations and human rights.

The use of AI through the adoption of various algorithms takes away the decision-making process from fallible humans and vests tit with the technology designed for that very purpose. Algorithms are commonly employed to personalize content in favour of the user in the hopes of pushing the user to use more of their content and other allied services including affiliated services. The use of algorithms is vast and extend beyond personalization of content. One of the most prominent examples can be found in countries such as the United States where attempts have been made to incorporate algorithms within the judicial system. The most common use is at the pre-bail stage to determine whether or not an individual can be granted bail. This system was intended to remove human biases rather it possessed several challenges of its own. The Partnership on

- Scientists repurposed living frog cells -- and assembled them into entirely new life-forms. These tiny 'xenobots' can move toward a target and heal themselves after being cut. They are neither a traditional robot nor a known species of animal. They're a new class of artifact: a living, programmable organism. The new creatures were designed on a supercomputer at UVM -- and then assembled and tested by biologists at Tufts University.

- Apple has acquired Seattle-based edge AI experts Xnor.ai for a reported $200 million. Apple acquired more AI firms (20) than any other leading tech company in 2019. Google took second place with 14 acquisitions, followed by Microsoft with 10.

AI, a research organization published a report in which it concluded that the algorithms currently used to for risk assessment of an offender are unfit for that purpose as they falsely label people at a higher risk based on erroneous data sets. Analysis suggest that the problem lies in 'bias traps' that subsist in the data set of the algorithm which renders inadequate outcomes. The main problem is that the algorithm uses a mathematical and methodical form of understanding rather than the concepts of justice or fairness which can have a variety of connotations. This results in the 'Formalism Trap' where a strict and almost methodical application will fail to take into account these social aspects. The most workable solution is to convert these seemingly intangible concepts into code-friendly language. Another commonly occurring issue is the 'Ripple Effect Trap'. When technology is used in a social context it has both intended and unintended consequences. An understanding of the pre-existing social scenario will provide valid insights into how people will probably interact with the introduction of such technologies. However, it can never fully be gauged and while the intended consequences are honest and bona fide, future human intervention can cause a breeding ground for bias.

The growth of AI and its use in various social contexts pose several problems that need to be rectified in order to preserve notions of fairness and justice. The use of such technologies undoubtedly possesses large potential that can be used to over-come human errors. However, without adequate changes made, these technologies will only exacerbate existing issues with devastating long-term effects.

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FIND THE WORDS!

-Sindhu A, 1650167

I	Y	G	O	L	O	N	H	C	E	T
N	P	Q	E	M	O	A	O	B	D	L
T	A	R	T	I	F	I	C	I	A	L
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L	D	N	M	T	N	E	G	A	I	T
L	R	E	H	Y	U	M	M	R	S	I
I	A	T	R	A	I	P	L	F	R	G
G	N	W	A	A	N	T	M	A	U	I
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C	I	K	Z	L	K	A	F	L	T	C
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A	M	A	N	M	E	O	R	L	N	T
B	T	O	D	F	R	L	N	E	I	O
A	C	A	L	G	O	R	I	T	H	M

FIND:

1. ARTIFICIAL 2. INTELLIGENCE 3.SOFTWARE 4.ALGORITHM
5. MACHINE 6.COMPUTER 7.AGENT 8.TECHNOLOGY
9. NETWORK 10.DATA 11.ROBOT 12.DIGITAL

Last Month's Answers

V	E	R	Y	T	F	G	A	C	A	I	C	F	U	E	R
A	G	G	R	E	G	A	T	I	O	N	O	G	A	K	M
N	B	T	N	A	T	E	B	J	G	M	N	H	Y	S	A
O	A	A	W	G	D	M	I	D	E	N	T	I	T	Y	A
N	Y	V	B	D	A	V	A	T	D	B	E	C	P	N	A
Y	V	V	Y	T	D	D	K	T	W	H	X	K	E	C	E
M	H	N	A	R	U	T	O	Q	I	B	T	L	A	H	X
I	W	M	T	T	A	V	A	D	N	H	U	O	K	R	P
T	A	A	R	C	H	C	H	P	U	S	A	D	Y	O	E
Y	A	W	Y	H	A	O	A	U	C	T	L	S	B	N	C
A	H	R	A	G	E	D	Y	T	I	H	A	W	G	I	T
M	K	H	L	D	T	S	D	T	A	C	Q	V	B	Z	A
R	O	R	A	E	U	V	C	A	E	I	F	B	B	A	T
D	A	T	E	F	J	Y	G	S	R	L	A	J	W	T	I
C	A	S	A	E	A	A	H	W	V	A	G	C	R	I	O
R	J	C	F	N	K	F	S	A	I	T	T	E	O	O	N
A	R	K	T	S	E	N	L	M	U	E	R	I	Y	N	O
R	Q	P	R	I	V	A	C	Y	L	O	A	D	F	S	U
Y	G	H	K	V	C	L	T	I	O	S	T	C	A	Y	A
W	E	K	B	E	A	T	C	I	E	R	A	E	X	C	H

AI & Pop Culture

-Khyati Kapoor, 1950349

- Runaround and I, Robot:

Isaac Asimov, was perhaps the first to ever mention the three (now very famous) Rules of Robotics, very similar to the laws of the land for any robot, something it must follow, which is also mentioned in his famous novel and film adaptation of I, Robot. They include: A robot may not injure a human being, or through inaction, allow a human being to come to harm; a robot must obey the orders given it by human beings except where such orders would conflict with the First Law; a robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

- 2001: A Space Odyssey

The movie which has been directed by Stanley Kubrick, is about HAL 9000, a computer with human personality, which takes over the control of a spacecraft, and kills human beings when it reads the lips of the protagonist talking to another scientist about disabling and shutting it down due to technical errors that it was clearly displaying. The concept of AI takeover has been emphasized upon in this movie, which displays a rather frightening future of the same.

Algorithms in the Criminal Justice System:

-Prateek Singh, 1950122

(Source: http://theconversation.com/why-using-ai-to-sentence-criminals-is-a-dangerous-idea-77734)

In today's worlds where AI is starting to become a bigger part of our day to day life, in USA artificial intelligence are used to set bail, determine sentences, and even contribute to determinations about guilt or innocence. And yet the inner working of what kind of data is fed or how the algorithm hasn't been given to the public. The AI gives different values to gender, economic status, age, geographic location resulting more giving inconsistent sentences/bail for the same crime. The AI named COMPAS used in USA federal and state courts. In an investigation 2016 by ProPublica, it was seen by benchmark testing that in general the AI COMPAS would have 20 percent more chance to mark a person as a risk who is African American than white. But since the program is proprietary in nature the defence can't challenge the validity of the results. A few questions arise from this is that how much a judge should really relay on this AI? And What different factors that should be incorporated or removed in evaluation of the program. My

- The Marvel Universe: Ultron And Jarvis

In the sequel to *The Avengers,* the original 6 are faced with the challenge of fighting robots, which are controlled by 'Ultron' originally created as a defense mechanism to fought the threats from space and its likes, but to no one's surprise, backfires. The movie's end also observes the rise of 'Vision', an artificially created human body which derives its powers from a magical stone but can also feel and take decisions, and most importantly, is the creation of human beings.

- The Terminator-All Parts

Directed by none other than James Cameron, this movie revolves around a cyborg assassin sent from 2029 to kill a particularly beautiful woman named Sarah, whose son would form the Resistance in the age of Skynet and AI takeover. The movie is a chase between her, a military man sent from 2029 to save her and the Terminator himself, (which can mimic voices) in an attempt to kill Sarah and prevent the formation of Resistance.

- Power Rangers- RPM (Racing Performance Machines)

The seventeenth season of the American TV series, it talks about Venjix, an AI computer virus that takes over all the computers of earth, and creates its own army of 'Grinders' which completely enslave or destroy the human race, and pour superheroes must protect the remaining human beings from the wrath of these robots.

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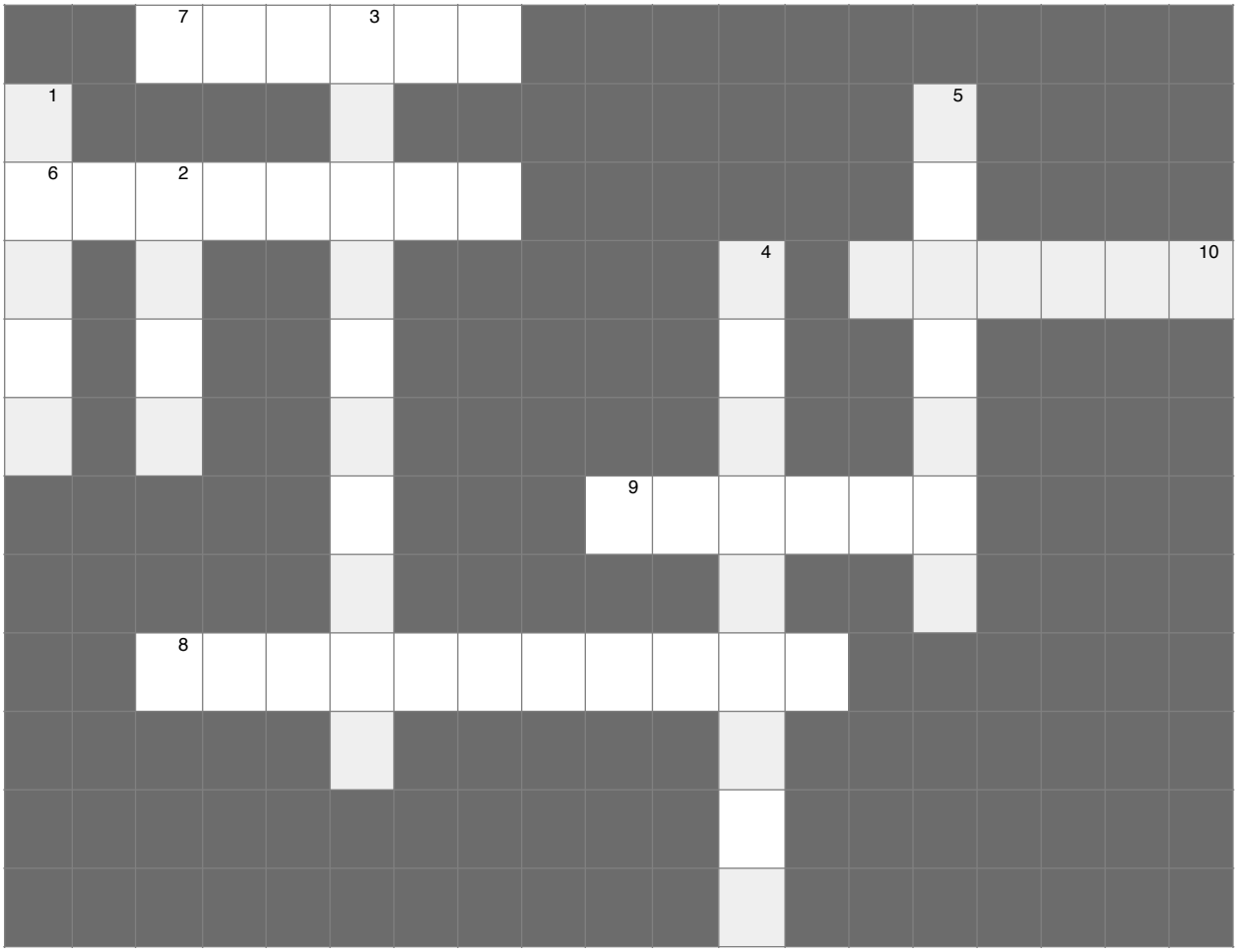
judgement would say that the AI should only be used as an advisory that too only in prohibition hearing or pre-trials. As a student of psychology, we studied that mind is an unpredictable stimulus and response system, to this day what we know about human behaviour is basically observation from a large group being generalized to the community. But giving this task to an AI to judge and predict the chance of a person being at risk that has the limitation to a fix database where it can only see numbers and patterns in society, rather than motives and emotions of the person. Is this justice? The 3 basic principles of law are "justice, equity, and good conscience "And I believe that no AI can follow these principles to give fair judgement. And even if we continue to do use the AI to determine the risk factor , the data base that helps to determine should be made public and secondly the parameters like geographic location and socioeconomic factors should be removed as they are just a facade to the racial inequality and targeting being done to a group.

I consider that AI being an unconstitutional body as it infringes the right to a fair trial. It is unconstitutional as seen in the case of Loomis v. Wisconsin, it was proven that the AI have different scales for men and women so even if all the factors being the same it would give different punishment on the basis of gender alone. Looking at all this I would say AI shouldn't be used for judicial process even though I agree that it might help in increasing the speed of the judicial process by just being a reference for the judge, rather it would be seen as going the other way around that the judge get influenced by the result of the AI and change the judgment to line with the AI.

CROSSWORD

- Mohtashim Shariff, 1650317



DOWN

1. A bronze automation made by the Greek god of fire and metallurgy Hephaestus, to protect the island of Crete.
2. Prevents robots from becoming true AI's.
3. The type of intelligencr exhibited by machines that is different from natural intelligence.
4. The first AI research workshop was setup in _____ college, New Hampshire in the USA.
5. Fictional AI character in the *Halo* video-game series.

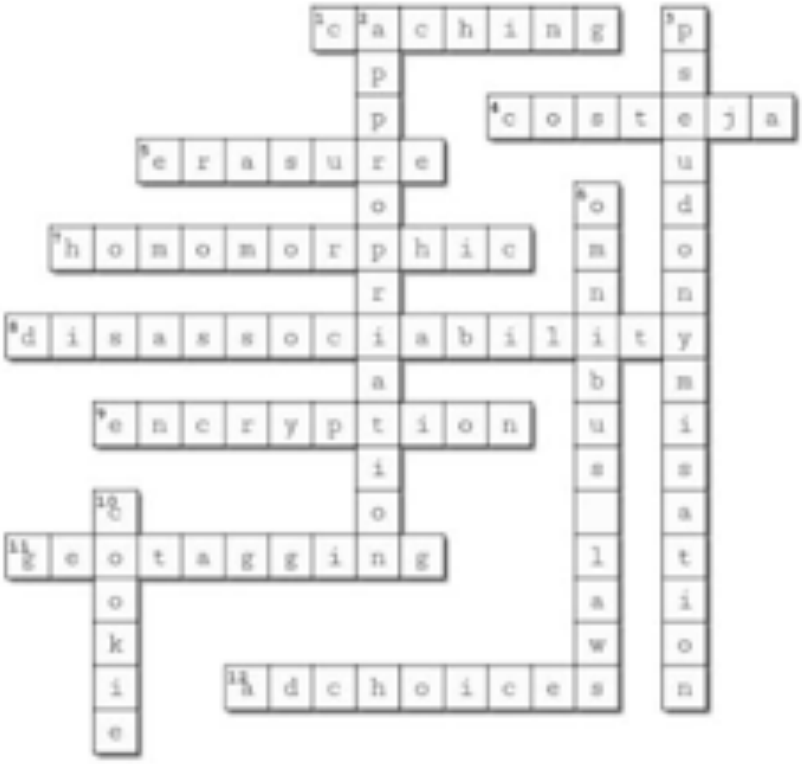
ACROSS

6. A period of reduced funding and interest in AI that is caused to disappointment following a hype cycle.
7. The first country to make a drone.
8. Considered obsolete today, the first laws of robotics were written by_____ .

9. A question-answering computer system developed by IBM.

10. If a human has an artificial limb then it may be considered a _____ .

Last Month's Answers:



- Black Mirror:

This anthology series has been created by Charlie Brooker and is run collectively by him and Annabel Jones. It brings up a new fictitious story in every episode, focusing on the unanticipated response of human beings to upcoming technologies. Some episodes have a dark and satirical tone, but others are light and more experimental. The episode 'Metalhead' deals with a woman chased by 'dogs' created by human beings, which have malfunctioned and will kill anyone, with the advanced technology that human beings could possibly never imagine in their wildest dreams.

- Doraemon:

All of us have desired at least one gadget from this famous cartoon show, whether it is the Anywhere Door or the goggles which help you cheat on exams. This mention of artificial intelligence is not only extremely advanced but also seems impossible, according to mathematical interpretations and the String theory.

Facial Recognition System (by NCRB) and its Privacy Concerns in India:

-Priyanshi Dixit, 1650160

Facial Recognition System (by NCRB) and its Privacy Concerns in India:

The National Crime Records Bureau's (NCRB) recent venture into a National Facial Recognition System (hereinafter referred to as 'System') for detecting criminals and other like purposes has received major flak.This article is an attempt at analysing the system vis-à-vis, the risk of introducing the same since the Privacy Laws in India are inefficient and in their nascent stage. Basic privacy concerns in of this system majorly include:

1- Purpose Specification-

With regard to Facial Recognition the purpose of introducing this system was laid down by the Bureau in its Policy. However, there has not been any update as to the location of installing the said system and has in general quoted CCTV images or Images from newspapers etc. to be used as basis for the purpose of identification. The policy thus sheds a danger of mass surveillance. As surveillance law still remains a gray area in Indian Law, the adherence to this principle does not make a strong ground for such enforcement.

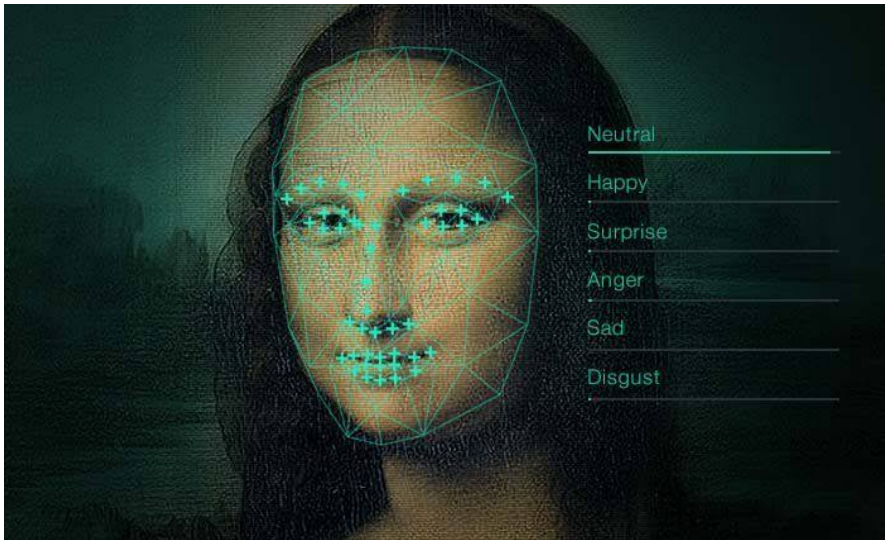
2- Transparency-

Unavoidably, the major principle to adhere to is that there must be transparency in the use of a system that uses private data of an individual. In a country, where the use of Aadhaar had to be judicially intervened through the Puttuswamy(2) judgment, such System only gives an arbitrary power to the Executive (Home Ministry) to regulate such data (indefinitely) with regard to its storage (***Collection Limitation***) and provides no information with regard to any third party purchases ***(Use Limitation).***

In the Puttuswamy judgment the exception of National Security was to be considered only after forming a balance between Right to Privacy and Public Interest. Therefore, the said decision should be made considering "minimal violation" of Privacy, which cannot be foreseen in the case of this Facial Recognition System. ***(Proportionality)***

3- Data Quality-

With regard to the accuracy of the said System there are serious concerns. The AI sshows bias in identification through its set in algorithm. This System has in the past, shown to be inaccurate in identifying darker-skinned women, those from ethnic minorities, and transgender people.



(Source: http://www.casino.org/news/ai-that-identifies-problem-gamblers-through-facial-recognition-technology/)

Conclusion:

The System has been tried and tested in various other countries. Countries like San Fransico and California have banned such system as it threatened privacy of its citizens. The Protection of Data Privacy Bill, even though has been proposed in India is yet to be tabled. The concerns that this policy faces with regard to law of Data Protection are - Firstly, since there are no laws to govern the privacy of the individual yet, the proposed system is a huge threat to the Right to Privacy of individuals. Secondly, given a scenario that the Bill is enforced, the concerns with regard to the Data Authority being highly influenced by the Central Government in making its decisions only makes stronger the negative case of Mass Surveillance in the present age of rampant government intervention in data collection and storage. Thirdly, even though the Proposal talks about the breach of the said provisions between parties, it does not, in any way concern itself with the potential threat to the right to privacy or, the liability faced by any party.

Fourthly, the ownership of data in the said System in no condition lies with the individual whose data is being stored.

Thus, even if there is a balance created by enforcing under the exception of Public Interest, it does not in any way find any balance with regard to even considering protecting the Right to Privacy. Such a system, thus with regard to the mentioned concerns only gives an Orwellian threat to citizens' Fundamental Rights.

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Of Copyright and Artificial Intelligence

-Manvee Kumar Saidha, 1750348

The heavy lifting done by technology in almost everything, is an unavoidable truth of the time we live in. Artificial intelligence, in particular, has assumed a crucial role in the development and expansion of practically all facets of life. The scenario of AI creating its own work is no longer hypothetical and seemingly poses various challenges as to the copyright of such works.

(Source: https://ia.acs.org.au/article/2017/do-robots-and-ai-think-about-copyright-.html)

Where the work is an output based on algorithms or codes fed to it, i.e., with human input, guidance and intervention, AI is considered to be a mere tool that has achieved a predicted outcome of the human author. In the Indian context of this situation, Section 2(d)(vi) would be applicable, which makes 'the *person* who causes the work to be created' the author. But, there are also instances where the work is an autonomous and independent creation of AI. For example, in 2016 The Washington Post launched 'Heliograph,' an AI system to write stories and reports. In its first year, 300 reports on

Rio Olympics and about 500 articles on the presidential election were ‘created’. Another system called ‘ANGELINA,’ has created over 35 games by itself. Here is where lies a void with regard to the application of copyright law.

THE CONUNDRUM

On one hand, such works could proceed directly into the public domain, since they absolutely lack copyright protection. This will be counterproductive in the long run, as developers will not be incentivised to make systems that can create work autonomously. This is because there will be no return on investment of creation (which is , essentially, the AI itself), and free-riding will be inherent.

As opposed to this, recognising AI as an author would require revisiting the judicial interpretation of the term ‘person’. It would be required to extend the meaning beyond that of natural persons. However, the limited history in this regard, does not set precedent in this direction. For instance, in the Naruto case, the court stated, ‘*even if Naruto had taken the pictures by “independent, autonomous action,” the suit could not continue as animals don’t have standing in court of law and therefore cannot sue for copyright infringement’*.

This reasoning has implications on how AI might be perceived as a ‘person,' and therefore, an author. Similarly, in the case of Amarnath Sehgal vs Union of India, Nandrajog J., recognising the moral rights of an author, stated the rights of paternity, preservation and retraction, came to the author from the fact that, “*a creative individual is uniquely invested with the power and mystique of original genius, creating a privileged relationship between a creative author and his work*.” Here, the Court’s emphasis on the individual while discussing an author’s moral rights suggests that artificial persons were meant to be excluded from the realm of authorship. Redefining authorship by including non-humans would not only open a Pandora’s Box of complications, but raise further questions that will require attention. For instance, since the existence of AI is perpetual, what is the duration after-which the work will fall into public domain?

CONCLUSION

It is time to acknowledge and understand that humans are no longer the only source of creativity or innovation, and a failure to reflect this reality in copyright legislations will further complications.

Financial incentives to encourage the growth and development of the AI industry to ensure due dissemination of AI generated works should be the primary goal of assigning copyright in this situation. The solution will, thereby, be both motivational to AI developers and non-disruptive to the current legal systems.

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STUDENT EDITORS' NOTE

The Intellectual Property Rights Committee presents to you the Ninth Edition of their newsletter 'Intellectualis'. The theme for the eight edition is 'Artificial Intelligence' and comprises of literary and non-literary works which will give an opportunity to our readers to open recesses of their mind in the domain of law and technology.

We would like to extend our gratitude to the student body of School of Law, CHRIST (Deemed to be University) for their overwhelming response to the newsletter. We would also like to thank our Chairpersons, Dr. Avishek Chakraborty and Dr. Aradhana Satish Nair for constantly supporting us and guiding us through the drafting of this newsletter.

We hope you enjoy reading our newsletter every month!

Sapni G Krishna,

30th January, 2020

Intellectual Property Rights Committee

School of Law, CHRIST (Deemed to be University), Bengaluru

STUDENT CONVENERS

Neerja Seshadri

Sapni G Krishna

FACULTY CONVENERS

Dr. Aradhana Satish Nair

Dr. Avishek Chakraborty

ipr@law.christuniversity.in