ETHICAL AND LEGAL ISSUES OF AI TECHNOLOGY AND ITS APPLICATIONS

Shruti Sharma[1] and Vatsal Chaturvedi[2]

ABSTRACT

Artificial Intelligence (AI) has an irretrievable impact on modern society for its appreciable work. In the tech-savvy world, AI is embedded in every sector and it has enriched the lives of humans by its effective and efficient work that not only cuts huge costs but also saves time and effort. Nevertheless, the AI ethics principle makes it utmost difficult for the authors to operationalize as AI poses fundamental challenges with respect to legal and ethical issues. The author is this research paper aims to identify different issues that encumbrance in the society concerning AI and possible solutions with the subsequent application. Indeed, Intelligent machines are able to outperform a human that has become a marketplace reality but there are various issues that spark a great debate in society regarding ethical and legal difficulties and their inevitable challenges to the world at large.

Keywords : Artificial intelligence, copyright, ethical and legal challenges, Machine learning, deep learning, privacy Consideration, Big Data privacy

---

[1] Law Graduate (University of Petroleum and energy studies, Dehradun)
[2] 4th year of Btech (University of Petroleum and energy studies, Dehradun)

1. Introduction

As correctly articulated by the Facebook's head AI researcher Yann LeCun "Our intelligence is what makes us human, and AI is an extension of that quality." In the era of digitalization, Artificial Intelligence has taken over the market with its limitless amount of advantages that not only relates to science and business but also phycology, philosophy, and other related fields. AI is an art that makes computers and machinery do intelligent work by itself without any human intervention. With the omnipresent amount of benefits to society and development in innovations and science AI has substantial risk when it comes to legal and ethical perspectives.[3]

There was a time when learning was limited to humans however, today learning is not the only constraint to humans but also machines. Machine learning raises a host of some ethical concerns. The biasness with respect to gender, racial and religion by the algorithms is not a myth rather a nightmare to the reality in the world of AI. Moreover, issues like inequality, unemployment, and privacy consideration are some points of distress. When it comes to legal perspective, there are an enormous amount of unsettled views on the subject of IPR, Contract, tort, and capital punishments in cases of violation. Discussing on criticism of AI-based on the legal and ethical point of view it has become a need of the hour to elaborate on the problems, solutions, and its application because completely abandoning AI and its advantages is unimaginable and insurmountable.

---

[3]Intricate Ethics: Rights, Responsibilities, and Permissible Harm. Oxford Ethics Series. New York: Oxford University Press. doi:10.1093/acprof:oso/9780195189698.001. 0001, Kamm, Frances M. 2007, 11-16

2. Ethical challenges:

The risk of human right violation by machines and new advanced technology undoubtedly gathered much of the attention in the current time and the need to identify them and provide subsequent solutions is extremely essential at this point in time.

2.1. Gender Bias in AI

If there is any Bias in the data Artificial intelligence will Automatically inherit it and even increase it. If AI learns to discriminate, the consequences of such technology can be ever-changing[4]. In March 2016, Microsoft created a Chatbot named Tay on Twitter whose objective was to mimic human conversation and engage with other Twitter users. After only 16 hours of its release, Tay tweeted more than 90000 times but many of its tweets showed sexism and racism which was very offensive and abusive for users due to which Microsoft had to shut down its chatbot and apologize for Tay's behavior.[5] In another research, it was found that Google's targeted ads were very biased towards men for jobs that offered higher pay and researchers asserted that it is gender discrimination.

2.1.1. Racial Bias In AI

It is beyond any doubt that racial discrimination will arise if no iconoclast approach is taken for the regularization of AI. Amazon prime provided two

---

[4] Gender shades: Intersectional accuracy disparities in commercial gender classification. Proceedings of Machine Learning Research, Buolamwini, J., & Gebru, T 2018. 81, 1-15.

[5] Who turned Microsoft's chatbot racist? Surprise, it was 4chan and 8chan, Chiel, E. 2016, March 24. Retrieved from http://fusion.net/story/284617/8chan-microsoft-chat bot-tay-racist/ access date 24 March.

days quick delivery services in many areas of the world but it was seen that the areas that were not supported for prime delivery were mainly black ZIP codes[6].Gerrymandering is the practice of controlling the electoral boundaries in order to influence the elections in favor of a party. Political Gerrymandering may be considered legal but well-established case law restricts racial Gerrymandering with the aim to discriminate against racial minorities. The British House of Commons released a Robotics and Artificial Intelligence report in October 2016, which highlighted some ethical and legal concerns, including open decision-making, minimizing bias, privacy, and transparency.[7]

2.1.2.   Religion and Belief Bias

Oppression on specific religious opinion is a human rights issue and Bias in Ai decision may magnify these issues. An AI categorizes Facebook users' interest and as a result, Facebook created some anti-Semitic ad categories so a promoter can easily target these specific groups[8]. Facebook had to remove these specific categories for targeted advertising after researchers notified the company about the same.

2.2.   Inequality

Artificial intelligence has the power to drive companies smoothly in order to make them more productive and reduce labor and make enormous profits which are completely taken by only the proprietor of AI-driven companies.

---

[6] Artificial intelligenceâĂŹs white guy problem. The New York Times Kate Crawford. 2016, 2-3
[7] House of Commons Science and Technology Committee, Robotics and artificial intelligence Fifth Report of Session 2016–17
[8] Discrimination through Optimization: How Facebook's Ad Delivery Can Lead to Biased Outcomes. Proceedings of the ACM on Human-Computer Interaction, Ali, M., Sapiezynski, P., Bogen, M., Korolova, A., Mislove, A., & Rieke, A, (et. Al) 2019, 3 and199.

Other than job loss the diversification in employment after the AI revolution will include many new forms of jobs[9]

These future jobs demand a high skillset but mundane and monotonous assignments such as data creation, tagging and managing data, cleaning of data for powering AI.

The state-of-the-art job will be Identifying and cleaning offensive content for deletion, Data annotation and manually tagging objects in images for dataset creation, Elucidate Queries that are not understood by AI. Complete administration of AI technology is hazy therefore most of the users never know that they were part of this process. The compensation paid to laborers is very inferior if compared to the price of the end product but that is not the only issue of inequality with laborers, another issue is that their work includes examining datasets for brutality, vicious pornography, animal or child murder, hate speech which results in mental conditions like stress, panic and trauma and also poor working conditions as stated by a news report[10] AI is similar to electricity due to its wide range of applications like making an area more productive and welfare of numerous lives but it will take a long time till everyone has access to the benefits of AI. AI is not a private resource but rather a public resource and available to all. This will push AI-driven economic transformation moreover it will build up public trust in AI.[11]

---

[9] (Hawksworth and Fertig,What will be the net impact of AI and related technologies on jobs in the UK? PwC UK Economic Outlook, July 2018, pg 77

[10]Chen, P., Rezai, A. and Semmler, W. Productivity Growth and Unemployment in the Short and Long Run. SCPEA Working Paper 2007-8, Schwartz Center of Economic Policy Analysis, 2007, pg 55-70

[11] Andrew McAfee and Erik Brynjolfsson, Machine Platform Crowd: Harnessing Our Digital Future (New York Norton, 2017, 200-340.

Amazon, Google, Apple, Facebook, and Microsoft are some of the technological giants with a huge concentration of political and economic power.

They can easily invest in AI-related ideas, start-ups and afford to make a societal impact. Google and Facebook are major platforms for spreading social and political news and awareness. These tech giants collect data from a vast number of users that helps them understand the behavior more than one can do himself or his family and friends. They are using this information for making immense profits by making this information available for security and political purpose.

2.3.   Unemployment

The AI revolution will influence unemployment either by directly replacing laborers from their day-to-day job that is displacement effect or by creating more new jobs for laborers that are productivity effect. Goose and manning (2007) state that jobs requiring cognitive skills along with least skilled jobs requiring manual skills will increase whereas routine and repetitive jobs will significantly decrease.

By analyzing the impact of technology on unemployment when cars were introduced horse and other cattle jobs were reduced but still impact on employment was positive. According to The Economist (2016) initially, the displacement effect will prevail but in the distant future if society adapts to learning new and creative skills the productivity effect may dominate.

2.4.   Security against evil genies and adversaries

1. Attackers deliberately create adversarial examples in order to make the machine-learning model inaccurate. Original inputs are incorporated with some computed noise, which makes the original input, and the modified image looks the same through the eyes but the model misinterprets them. Attackers can easily evade spam filters and malware detectors using adversarial examples. Designing a defense system is a very crucial research area as of now none of the approaches is flexible enough to make our model robust to every kind of attack rather than some specific attack. Reinforcement learning agents like AlphaGo which outperformed humans on various games would get affected unlike humans if slight changes are made in-game structure or game rules and at the same time, humans can easily adapt to these changes without facing any problem. Autonomous systems can drift into other lanes, not follow stop signs and traffic lights if some adversarial tapes are introduced to these signs.

2. The introduction of noise will not affect human decisions and the capabilities will not be disrupted rather tapes and noise will be treated as irritation. [12]

3.   Legal Challenges:

The legal issues of AI create a far-reaching negative impact on the development and advancement of AI. The vulnerability of issues was determined in various human rights treaties and conventions like International Convent on Civil and Political Rights (ICCPR), International Economic, Social and Cultural Rights (ICESCR), Universal Declaration on Human Rights (UDHR).

---

[12] Attacking Machine Learning with Adversarial, OpenAI,24 February, 2

3.1. Intellectual property rights:

Unquestionably, AI creates subject matter that can be protected under the Intellectual Property Right law. However, AI's effects on the IPR regime are not the same as human authors are treated for legal purposes. The issues regarding copyright and patent are likely to increase in the coming future.

3.1.1. Copyright:

A copyright is a form of intellectual property right that generally exercises literally, artistic or dramatic work. The requirement listed in the US copyright office makes it a pre-requisite that no work by any mechanical process will be registered and unless there is creative work done by the human author as it becomes nearly impossible because it cannot be enforced in a court of law. In the landmark case of Burrow Gilles Lithographic Co. v Sarony[13] the court applied a strict approach and held that granting copyright protection to Artificial Intelligence (AI) is very difficult. In another case, Bleistein V. Donaldson Lithographing Co.[14] the court provided the perspicuous explanation that something which is not a product of man's creativity cannot be granted copyright protection. The National Commission on New Technological Uses of Copyrighted Works (CONTU) provided that the application of AI is not empirical rather based on concepts. However, the Office of Technological Assessment (OTA) argues about the ability of computers to be as creative as humans. In the recent case of, Naruto V. Slater[15] the court clarified the position of copyright and stated that since animals do not have any legal standing so

---

[13]Burrow Gilles Lithographic v. Sarony, 111 U.S. 53 (1884).
[14]Bleistein v. Donaldson Lithographing Co., 188 U.S. 239 (1903).
[15]Naruto v. Slater, 2016 U.S. Dist. Lexis 11041 at *3 (N. D. Cal. Jan. 23, 2016).

they cannot obtain copyright. The most significant requirement of copyright is personhood which AI shortfall.

Moreover, the criminal liability that makes *Actusrea* and *Mensrea* legal footing to create liability is also a missing factor in AI.[16] Therefore, it becomes utmost difficult to acknowledge AI in copyright protection. However, the author would like to give recommendations and suggestions regarding the same in the latter part of this paper.

3.1.2.   Patent

Under US patent Law[17], an 'inventor' is an individual or set of individuals who have invented or discovered the subject matter of the invention. This clearly states the intention of the lawmakers of the US that discovery and inventions apart from humans are not admissible as envisaged under US patent law. However, European Union has formed a draft wherein they have encouraged creative work by machines and computers that include poetry, artwork, etc., and application of patent by AI system and robotics.[18] The requirements of the patent are that there must be a novelty, industrial application, and inventive step.

As far as AI is concerned making discoveries and inventions is a big challenge because computers are categorized under "own intellectual creation" and are

---

[16]Copyright, Designs and Patents Act, 178, 1988 (UK); Copyright Act, 2, 1994 (New Zealand).

[17] Consolidated Patent Laws, 100 (f), U.S.C 35, https://www.uspto.gov/web/offices/pac/mpep/consolidated_laws.pdf, (accessed date 27 March 2021)

[18] Draft Report with recommendations to the Commission on Civil Law Rules on Robotics, EUROPEAN PARLIAMENT (2014-2019), http:// www. europarl.europa.eu/sides/getDoc.do?pubRef=-//EP// NON SGM L%2BCOMPARL%2BPE-582.443%2B01 %2BDOC%2 BPDF% 2BV0 //EN, (accessed date 27 March 2021)

insufficient to decide on the above dimensions without any human interference. Moreover, the patent must be consistent with public policy.

Nonetheless, AI is inadequate to decide and make an intelligent and reasonable choice on basis of these requirements. The need of the hour is to first create a human-like intelligible technology that is advance enough to deal with such issues. In most the cases[19] the Court has denied a patent to AI since it performs more of the mechanical work rather than inventive and intelligible work.[20] In the case of Townsend v. smith[21] the court cleared the position of "inventor" and "invention" wherein it was stated that any invention or discovery if not predetermined on an idea then it cannot be termed as invention and the person giving it cannot be an inventor which means that only humans are capable of performing this.

Moreover, in case of any violation, it necessarily involves the human element as AI cannot be held liable and be punished for its criminal action. However, relevant actors in the market must draw a balance as AI through the patent may have some substantial social, ethical and economic impact.

3.2. Contract

The basic requirement of contract is offer, acceptance, and consideration. Smart contracts are the future of contract analytics. These contracts do not have any intention to be bound by legal enforcement, as they are the result of

---

[19]Bilsk v. Kappos, 561 U.S. 593 (2010).
[20] Ronald Yu, Should an Artificial Intelligence be allowed to Get a
Patent?ROBOHUB,http://robohub.org/should-an-artificial-intelligence-beallowed-to-get-a-patent/. (accessed date 28 March 2021)
[21]Townsend v. Smith, 36 F.2d 292,293 (1929).

blockchain technology.[22] The mere reason for lack of flexibility and lack of reasoning is the absence of a human application. Therefore there is a need to evaluate and scrutinize the work of AI properly. However, failure to do the same would result in an unsuccessful contract. Undoubtedly, AI is extremely beneficial in comparing, drafting, and reviewing the contract which saves time, money, and effort but the decision-making process in the legal system by AI is not trustworthy.

Case analysis of many companies like lawGeez and Ned Gannon and Adam Nguyen provides that these companies use AI technology that cuts a huge amount of costs and saves time which makes tasks like summarizing, reviewing, managing, comparing easy.

3.3. Tort:

In traditional tort law, the concept of joint and several liabilities remains out to be ineffectual as modern technology requires new rules and regulations that can be applied to AI. The tortious liability or the criminal liability in AI would make the tortfeasor vicariously liable for the negligent act and lack of standard of care. However, the AI automation decision is without any human involvement and calls for a human review[23]. In the case of *paragraph v. long Island. Co* provides that pure logic and actual causation would be insufficient to decide a tort liability. When the question is of imposing criminal liability on intangible things the American courts have mostly relied upon the approach of

---

[22]Thomson Reuters, Use of artificial intelligence for smart contracts and blockchain. Retrieved from: Use of artificial intelligence for smart contracts and blockchain, 2018, 8-pg

[23]Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation), art. 22, 2016 O.J. (L 119) 1, 46 (EU)

"leave AI alone" wherein in the cases of product liability the manufacturer is liable even when he was not negligent and acted rationally.[24]

Another shortcoming in AI is lack of foreseeability, the "robot common sense" to adapt to legal and external changes remains out to be a negative area when it comes to the criminal legal system. The law needs to evolve itself so that the test of strict liability provided in *Rylands v. Flecher*[25] can be replaced as with the recent technological changes in society the law needs to adapt itself.

3.4. Privacy :

Privacy consideration: with the escalating amount of data collection, advanced algorithms, and digitalization the privacy protection has become a myth especially when it comes to AI. AI is an umbrella wherein the subject matters like big data, machine learning, and deep learning falls in. Moreover, AI technology also has a great impact on the Public sector. It is pertinent to note that, "privacy preservation" and "confidentiality preservation" require anonymization techniques that must be developed. For the protection of privacy, technological innovations and privacy considerations must be kept on an equal pedestal.

In 1980 0ECD guidelines on the protection of privacy and transborder flow of personal data and provide legislation and how privacy can be protected around the world. In 2019, the OECD and European Commission have published Ethics guidelines for Trustworthy AI that recommends how AI should be regulated and monitored.

---

[24]1 stuart m. Speiser et al., the american law of torts 1.3 (2013).

[25][1868] ukhl 1

Big data privacy: Big data is a tremendous amount of data in many forms that are used in everyday life by companies, government, and individuals. Big data and AI use are used in many companies for the decision-making process and for improvising and making innovations according to the need and requirements of individuals in an expanded database.[26]

Machine learning: it is a technique by which the computer has the potential to learn on its own and adapt to conventional machines to enhance performance when it is exposed to more data. Machine learning is used in problem-solving techniques in many areas.[27]

Deep learning: Deep learning is a subset of machine learning or an artificial intelligence which uses neural networks also known as universal function approximate for processing data and making decisions.

Legislative:

The recent highlights about the leakage of huge amounts of personal data on various social media platforms and other platforms have increased the concern about the protection of privacy. In 2018 the Facebook allegedly use the data of more than 87 million users without any consent for political marketing as a result of which Facebook was fined 5 billion which is the largest amount of fine paid in the data scandal.[28]In the recent case, *Janecyk v. International Business*

---

[26]A thorough explanation of big data can be found in the Report of the Special Rapporteur on the right to privacy, prepared for the Human Rights Council, A/72/43103, October 2017

[27]The UK Information Commissioner's Office (ICO), Big Data, artificial intelligence, machine learning and data protection, 2017, p 8.

[28]Wong, J. C. (2019, August 23). The document reveals how Facebook downplayed early Cambridge Analytica concerns. Retrieved November 1, 2019, from

Machines[29] where IBM used various pictures available publicly for diversity in faces database and held liable for $5000 per violation. In the case of *Mutnick v. Clearview* Clearview AI facial recognition has been sold to 600 law enforcement agency and another private agency without any consent has been held subsequently liable under BIPA[30]. In another landmark case, *Dinerstein v. Google,* it was alleged that Google has illegally obtained data of patients of HIPPA through an AI data mining company and used it for machine learning court held Google liable for the same.

With the augmentation of the cases and other data scandal incidents, the government of various countries is updating the legislation. The European parliament after realizing various risks and the likelihood of threats of AI has enacted General Data Protection Regulation (GDPR) with the objective to keep all the data and personal information of citizens safe and secure. Canada has formulated a similar guideline as GDPR that will govern the breach of security safeguard. PIPEDA contains compulsory rules that every company has to abide by in case of a data breach. However, in the USA, many companies like Apple are encouraging the government to legislate a law against AI violations. In January 2019, Accenture has released a report on how to curb the above issue.

4. SOLUTIONS

Indeed robotics and AI will have a tough time dealing with human intelligence and reasoning. But we need a better plan for our future and start now by

---

[29] Case No. 1:20-cv-00783 (N.D. Ill.) (filed January 22, 2020)

[30] Case No. 1:20-cv-00512 (N.D. Ill.) (filed January 22, 2020)

contemplating on how to be smart when machines are smarter. This is certainly an area for future

research and evaluation but subsequently taking a step forward and digging solutions for various ethical and legal issues is the demand of the society.

4.1. Biasness:

To curb the Algorithm bias the technique of data collection and its handling should be impartial and the standard of utmost transparency shall be maintained so that the decision-making process is neutral.[31] Additionally, to minimize favorable behavior by AI technique of validation and verification of AI systems should be encouraged. The relevant actors should spread awareness about the limitless advantages and significance of AI.

4.2. Unemployment :

Programs for training and employment should be modified to provide staff with the right credentials so that workers can improve appropriate digital skills. This could eventually contribute to the creation of new positions and career opportunities along with the development of technology. Simultaneously, a concrete understanding of AI-era is paramount which will create a foundation for this framework and motivate social dialogue.[32]

---

[31] Angwin, J., Larson, J., Mattu, S. & Kirchner, L. (2016), "Machine Bias – There's software used across the country to predict future criminals. And it's biased against blacks", ProPublica. Available online: https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing (accessed on 18th march)

[32] Acemoglu, D. and D. Autor (2011), 'Skills, Tasks and Technologies: Implications for Employment and Earnings', in O. Ashenfelter and D. Card (eds), Handbook of Labor Economics, vol. 4, Amsterdam: Elsevier.

4.3. Inequality:

Various companies like AT&T have started re-training program to their workforce and some other companies like Cisco, IBM, Caterpillar, McKinley are focusing upon workshops and internships to students so that rebooting of the education system about harness machine intelligence so that appropriate education system can be substantially added in the society to eliminate the concern of algorithm inequality.[33] Therefore, the pedagogy of this subject should be upgraded in the current teaching curriculum.

4.4. Adversaries:

The thing that has been worrying experts is the security threats the Artificial intelligence will bring along with it and Adversarial examples are a vital case of privacy and security.

It is much easier to build a nuclear bomb than to build a city that is able to withstand a nuclear explosion so defense against adversarial examples is harder than the attack.

As part of the training, the model must be feed with adversarial examples[34] in order to make the model more robust to adversaries by dynamically generating for testing. Another technique that may improve the security against adversaries is Defensive distillation[35] rather than predicting hard class labels (0 or 1), the distillation network is trained to predict the class

---

[33]Algorithms Are Making Economic Inequality Worse**, HBR,** by Mike Walsh, October 22, 2020, pg3

[34] GSS14] Goodfellow, I. J., Shlens, J., & Szegedy, C. Explaining and harnessing adversarial examples, 2014, pg 19-21
[35] Papernot, N., McDaniel, P., Wu, X., Jha, S., & Swami, A. (2016, May). Distillation as a defense to adversarial perturbations against deep neural networks. In the 2016 IEEE Symposium on Security and Privacy (pp. 582-597)

probabilities generated by the first network (0-100%) which smooth the model's decision surface and makes it more efficient against adversaries.

4.5. Intellectual property rights:

A theoretical solution for non-humans author for their copyrightable work contentious and may result in may lead to system abuse. However, in the UK the law protects computer-based copyrightable work but there is no legal provision concerning the same. Incentivizing human scientists to create such technology and improvise the current automation to the super-intelligent system is the urgent need of the hour. Moreover, the criteria of present eligibility of subject matter shall be revised and analyzed if it has any negative impact in supporting the growth of AI that undoubtedly have limitless advantages. The relevant actor in the market shall also diligently analyze the balance of contrary forces of AI-driven technology. Further research and exploration are required, particularly as AI progresses further and it is becoming increasingly difficult to identify the author.

4.6. Contract:

To fabricate smart contracts into legally feasible contracts the most favorable solution is that the existing rules are inconsistent with the demand of changing society and calls for the amendment of new rules which will take into consideration certain points like how AI will be held liable for any act or omission and whether the vendor/inventor has to bear the resulting cost. Moreover, for smart contracts to be more effective and efficacious the input of

lawyers indisputably essential as they can fix the gap that would give a fortunate output for all business and other contracting parties.

4.7. Criminal liability:

The concept of strict liability is a poor solution as the foreseeability in AI unimaginable. The criminal and civil liability of AI entities can be addressed in Consumer protection law[36]. Along with the existing liability, a better legal structure must be formed that can be applied to AI-robots.[37] In 2020, the European Commission has discussed the AI civil liability in the report of safety and liability framework.[38]

4.8. Privacy:

The existing laws regarding data protection, privacy, and rights of data principal like transparency, rectification, erasure, etc. are inconsistent with the rapid change in context if AI. Close attention shall be paid to ethical and regulatory restriction. Moreover, the "high-risk inference" accountability gap shall be filled. Also, the dispute regarding the societal value and fundamental right should be carefully analyzed and rendered upon

---

[36] Hallevy G (2015) AI v. IP - Criminal Liability for Intellectual Property IP Offenses of Artificial Intelligence AI Entities. http://dx.doi.org/ 10.2139/ssrn.2691923, (accessed on 21 March.

[37] Whose robot is it anyway? Liability for artificial-intelligence-based robots
University of Illinois Law Review, 2020 Forthcoming. SSRN, pg 8-9

[38] European Commission White Paper on artificial intelligence - a European approach to excellence and trust. Brussels, 19.2.2020 COM(2020) 65

5. APPLICATIONS

Application of curbing legal and ethical issues in AI is only possible when the limitations of human application and reasoning would be made a reality. However, while analyzing all the issues this is an impossible task, but like Audrey Hepburn correctly quoted that "nothing is impossible, the word itself says I am possible" there must be some solution and application for making AI legally and ethically valid.

Data governance boards that talk-over issues like privacy, data, cyber, and compliance are key for the proficient formation of AI ethics otherwise an ethics council or committee should be created and external subject experts like ethicists should be included as well.

KPIs and quality assurance programs should be established which can help in keeping notes of tactics and strategy. A framework with good coherent ethical standards and governance structure will guide how ethical risk like biased algorithms, unexplainable outputs, and privacy violation alleviation is used in operations. Infrastructure and practice that respects values of ethical issues of bias, unemployment, and inequality should be formed and reinforced regularly.

Making predictions accurate has been the objective for every enthusiast but making outputs explainable is more important if the output has life-altering potential. Product managers should be upskilled and provided with some tools that can make their product more explainable and accurate. They should judge how much essential is explainable output for the required problem. Educating and cultivating workers and authorizing them to raise questions and concerns

to the appropriate body is required for creating a culture with applied AI ethics.

When people are financially motivated to work unethically the ethical standards are often compromised and become less important so giving a bounty to people for their attempts in nurturing AI ethics is necessary.[39]Operationalizing AI ethics is difficult but the need of the hour for a company to be stated as trustworthy for clients and customers.

The application concerning an appropriate legal system that supports innovation and technological advancement is only possible when the law changes with changing needs of the society. Employer incentivizing for acting as a whistleblower for improvement of AI and other such practices must be encouraged. A uniform International law shall be legislated to govern AI and Robotics by taking assistance of some of the existing rules and regulations like GDPR, NZPA 1993, UKDPA, etc.

6. CONCLUSION:

Predicting the future is not magic it's Artificial Intelligence. Humans and AI are inextricably linked in modern society and disregarding the benefits and requirements of AI in this generation and coming future is like paying no heed to the development of the world at large. Fixing the gap between AI and the legal as well as ethical issues extremely strenuous task because molding machines like humans with the same amount of creativeness and reasoning skills looks non-viable. However, biding one's time for such development to take effect while suffering various challenges by machines that affect society

---

[39] A practical guide to building ethical AI, HBR, by Reid Blackman, October 15, 2020, Page 4

mentally, physically, and economically is also not the recourse. The implementation and application of an appropriate legal structure that can outspread fairness, justice, and stricture several challenges by AI towards humans is a compelling necessity.

7. REFERENCES:

1. Intricate Ethics: Rights, Responsibilities, and Permissible Harm. Oxford Ethics Series. New York: Oxford University Press. doi:10.1093/acprof:oso/9780195189698.001. 0001, Kamm, Frances M. 2007, 11-16

2. Gender shades: Intersectional accuracy disparities in commercial gender classification. Proceedings of Machine Learning Research, Buolamwini, J., & Gebru, T 2018. 81, 1-15.

3. Who turned Microsoft's chatbot racist? Surprise, it was 4chan and 8chan, Chiel, E. 2016, March 24. Retrieved from http://fusion.net/story/284617/8chan-microsoft-chat bot-tay-racist/ access date 24 March.

4. Artificial intelligenceâĂŹs white guy problem. The New York Times Kate Crawford. 2016, 2-3

5. House of Commons Science and Technology Committee, Robotics and artificial

6. intelligence Fifth Report of Session 2016–17

7. Discrimination through Optimization: How Facebook's Ad Delivery Can Lead to Biased Outcomes. Proceedings of the ACM on Human-Computer

Interaction, Ali, M., Sapiezynski, P., Bogen, M., Korolova, A., Mislove, A., & Rieke, A, (et. Al) 2019, 3 and199.

8.   (Hawksworth and Fertig,What will be the net impact of AI and related technologies on jobs in the UK? PwC UK Economic Outlook, July 2018, pg 77

9.   Chen, P., Rezai, A. and Semmler, W. Productivity Growth and Unemployment in the Short and Long Run. SCPEA Working Paper 2007-8, Schwartz Center of Economic Policy Analysis, 2007, pg 55-70

10. Andrew McAfee and Erik Brynjolfsson, Machine Platform Crowd: Harnessing Our Digital Future (New York Norton, 2017, 200-340.

11. Copyright, Designs and Patents Act, 178, 1988 (UK); Copyright Act, 2, 1994 (New Zealand).

12. Consolidated Patent Laws, 100 (f), U.S.C 35, https://www.uspto.gov/web/offices/pac/mpep/consolidated_laws.pdf, (accessed date 27 March 2021)

13. Draft Report with recommendations to the Commission on Civil Law Rules onRobotics, EUROPEAN PARLIAMENT (2014-2019), http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP// NON SGML%2BCOMPARL%2BPE-582.443%2B01 %2BDOC%2 BPDF% 2BV0 //EN, (accessed date 27 March 2021)

14. Ronald Yu, Should an Artificial Intelligence be allowed to Get a patent?ROBOHUB,http://robohub.org/should-an-artificial-intelligence-beallowed-to-get-a-patent/. (accessed date 28 March 2021)

15. Thomson Reuters, Use of artificial intelligence for smart contracts and blockchain. Retrieved from: Use of artificial intelligence for smart contracts and blockchain, 2018, 8-pg

16. Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation), art. 22, 2016 O.J. (L 119) 1, 46 (EU)

17. Hallevy G (2015) AI v. IP - Criminal Liability for Intellectual Property IP Offenses of Artificial Intelligence AI Entities. http://dx.doi.org/ 10.2139/ssrn.2691923, (accessed on 21 March.

18. Whose robot is it anyway? Liability for artificial-intelligence-based robots

19. University of Illinois Law Review, 2020 Forthcoming. SSRN, pg 8-9

20. European Commission White Paper on artificial intelligence - a European approach to excellence and trust. Brussels, 19.2.2020 COM(2020) 65

21. Algorithms Are Making Economic Inequality Worse, **HBR,** by Mike Walsh, October 22, 2020, pg3

22. GSS14] Goodfellow, I. J., Shlens, J., & Szegedy, C. Explaining and harnessing adversarial examples, 2014, pg 19-21

23. Papernot, N., McDaniel, P., Wu, X., Jha, S., & Swami, A. (2016, May). Distillation as a defense to adversarial perturbations against deep neural networks. In the 2016 IEEE Symposium on Security and Privacy (pp. 582-

24. Angwin, J., Larson, J., Mattu, S. & Kirchner, L. (2016), "Machine Bias – There's software used across the country to predict future criminals. And it's biased against blacks", ProPublica. Available online: https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing (accessed on 18th march)

25. Acemoglu, D. and D. Autor (2011), 'Skills, Tasks and Technologies: Implications for Employment and Earnings', in O. Ashenfelter and D. Card (eds), Handbook of Labor Economics, vol. 4, Amsterdam: Elsevier.