# Ethics' Importance In The Technological Advancement

## Introduction:

Data Science, Artificial Intelligence, and Machine learning are being the trending topics of discussion in this Data Era. As we know, the world is now rapidly transitioning from the orthodox methods of tackling problems to the data-driven technological methods of dealing with real-world issues. Considering the humungous amount of data generated over the internet these days by cell phones, Laptops, IoT in multiple sectors like education, E-commerce, Banking, and entertainment, Data has become a headline in this world of technology. Several organisations have rapidly realised that the data accumulated over the years and the data that is being generated on the internet as we read is more beneficial to them if analysed and exploited intelligently. This is where Data scientists come into the picture (Aalst, 2014).

As mentioned previously, the data being generated over the internet is growing exponentially on the physical and virtual databases. This data is diverse and has no specific format, size, or structure. The zettabytes of data accumulated by diverse sources can be in the form of images, videos, audio, tables, documents, or logs. Hence, this type of data is known as Big Data. A Data Scientist processes the data and organises it before reading and analysing it for deriving cardinal insights for predictive analysis or decision making. Furthermore, the insights and decisions made by the data scientist are provided and utilised in the field of Artificial Intelligence and Machine Learning. Therefore, we can say that Data Science is the fundament of Artificial Intelligence and Machine Learning. Artificial intelligence and machine learning are a collection of various technologies that enable machines to understand and learn from human-like levels of intelligence. Since these new upcoming streams of technology are completely based on automated decision-making on human-like levels, these decisions made by the machine must be based on ethical and moral grounds. Norvig and Russell have defined AI in four simple ideologies:

1. Thinking humanly
2. Thinking rationally
3. Acting humanly
4. Acting rationally

This is where Ethical Artificial Intelligence comes into the picture(*Steps toward Artificial Intelligence*, 1961).

**Ethical AI:**

Artificial Intelligence must adhere to a set of ethical guidelines regarding core values, such as respect for human rights and privacy. There are various requirements that organizations must follow to operate with AI. It must preserve privacy, Identity and maintain equality amongst the users. A well-designed system that is automated to function within its guidelines without obstructing the moral and ethical grounds of the society or an organisation is called Ethical Artificial Intelligence. There are numerous advantages to the use of AI for good purposes. However, if done unethically, it can cause severe harm to society, the environment, and individuals. This is why an individual and organizations must use ethical AI when it comes to developing and using this technology. (C3.ai, 2020).

**Ethicists:**

Negotiating the tension between the potential benefits and the harmful effects of AI is an important part of the AI journey, in other words, the misuse and underuse of these technologies must be avoided at the same time. To maintain socially preferable AI outcomes, the tension between incorporating the benefits and minimising the various risks of AI must be resolved. In this light, the importance of taking an ethical approach to AI technologies becomes quite apparent. Compliance with the law is obligatory, but it is far from sufficient. AI should be designed and engineered to eradicate inequality, promote social empowerment, and expand the benefits shared by all while preserving individualism. To ensure that an optimal solution is offered to the AI being developed, companies now hire Ethicists. Ethicists are members of an ethics committee or review board who are knowledgeable about a wide range of ethical principles, practices, and processes. They provide information to assist these organisations interested in evaluating breakthroughs from the perspectives of societal morality and technological idealism (Floridi, 2018).

**Case Study of Timnit Gebru:**

(*Facial Recognition, Demographic Analysis and More with Timnit Gebru*, 2019)

Timnit Gebru is an Ethicist in the field of AI. She was born and educated in Ethiopia and came to the United States when she was 16 years old to pursue her doctorate at Stanford Artificial Intelligence Laboratory. While still a student, she worked as a postdoctoral researcher at Microsoft Research in New York and co-founded Black in AI, an organization dedicated to promoting collaboration and addressing measures to improve Black representation in the field of AI (Lahde, 2018).

Wednesday, December 2, Timnit Gebru, Google's ethical AI team's co-lead tweeted that the company had forced her out based on a groundbreaking paper entitled "**On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?**". The paper entailed a lack of precision and accuracy in the facial recognition technology when subject to identifying women and people of color. As a result, it has the potential to be discriminatory toward women and people of color. However, Megan Kacholia, an executive in Google issued a jarring command against the paper. According to the order, Gebru and a few others in her research team had to retract their paper or have their

names removed from the author list. On other hand, the paper was pretty uncontroversial according to Gebru as it looked at the shortcomings of complex language models, a form of artificial intelligence software exemplified by the GPT-3 system, which generated widespread attention in the computing world(Simonite, 2021) (*We Read the Paper That Forced Timnit Gebru out of Google. Here's What It Says.*, 2020).

**Why are Ethicists valuable to the companies?**

Multinational corporations such as Google, IBM, Tesla, Amazon, and others are working on a series of AI projects at the same time, compiling user data to improve convenience and revolutionize how people deal with their day-to-day challenges utilizing artificial intelligence. Hiring an Ethicist or an entity like Timnit Gebru is highly recommended in these companies. As mentioned previously, data science is the foundation of AI. As data scientists, we use this information to generate knowledge and useful insights to create a system that can think and act like a human. When it comes to monitoring these systems, an ethicist is essential. Furthermore, an ethicist ensures that the processes are fair and do not favour any one person or organization over another. "I'm not worried about machines taking over the world," Gebru wrote. "I'm worried about groupthink, insularity, and arrogance in the AI community.". Ethicists like Gebru herself enable society to gain impartial benefits from the technology and avoid discrimination based on sex, race, religion, gender, and color. An innovation that is capable of making claim decisions and carrying out activities based on those decisions must follow society's ethical and moral guidelines. Hence, I would like to conclude by saying that Ethicists play a vital role in today's era by eradicating the discrimination present in technology. Thus a person like Timnit Gebru is a value not only to the company but also to the world that is relying on the technological advancements (*Standardizing Ethical Design for Artificial Intelligence and Autonomous Systems*, 2017).

**Challenges:**

Just like Timnit Gebru faced a career-changing challenge while working in the Ethical AI sector of Google, it is utmost certain that an Ethicists of any company working on developing automated systems will have to face differences in corporate policies and

culture. For example, super intelligent AI is an invention that is unlike any other AI system. It is radically different and far more powerful than any other. Scientists and researchers are now focusing on the inventions of superintelligent AI. Superintelligent AI is mainly based on performing activities and complex computations faster and more accurately than a human mind. Having developed a successful Super intelligent AI system, it is said that "Superintelligent AI may be the last invention humans ever need to make"- Nick Bostrom.

It is at this point that an ethicist might experience social differences. Since scientists are driven towards building systems more powerful than the human mind, this may lead to social differences if ethics and morals aren't observed. Developing such a powerful system without addressing the appropriate ethical rules prompts ethicists to push the developers to ensure that the technology is constructed with the correct set of values, causes no harm to society, and provides equitable benefits to all who use it (Ouchchy et al., 2020) (*Evaluation of Human Robot Interaction Factors of a Socially Assistive Robot Together with Older People*, 2012).

**Timnit Gebru's actions and assessment by Google:**

As mentioned in the article "**What Really Happened When Google Ousted Timnit Gebru**", After initiating the harrowing orders regarding the paper, Kacholia also sent a list of alleged mistakes to Samy Bengio (Gebru's manager), not to help Gebru restore her focus on the research paper, but only to demoralize the situation. Moreover, Kacholia asked Gebru to rectify her mistakes a week away from Thanksgiving. However, the paper was pretty unobjectionable from Gebru's perspective. In the article, Gebru attempted to communicate with the concerned authority several times without success, which led to frustration and anger. As Gebru was willing to rectify the situation and alter the research paper but Google should have provided Gebru with the right help. Transparency in such situations is highly recommended as it might affect an individual's entire career. If the assessment would have been more transparent and specific, Gebru would not have taken these extreme measures of challenging her senior employees. Gebru's six-page response to explain her perspective on the paper and ask for guidance for revising the paper instead of eliminating it was overlooked. Furthermore, Kacholia was vague and very general about the objections she has in the research paper, and the

notes did not offer any specific edits rather just pointed out the flaws in the paper and stated the paper had handled the topic casually.

Therefore, I think Gebru's attempts to explain herself and communicate with her seniors over the issues were the right moral and ethical actions. According to me, the firing of the emails and challenging corporate officials was a result of irritation and fury built up due to Google's neglect of the problem. In stressful situations, people tend to make snap decisions without fully considering the repercussions, which can have a significant impact. However, Gebru's emails were the two sides of a coin, one that attempted to resolve the conflict, and another that intensified it beyond her wildest expectations. Gebru attempted to bring clarity to the problem by determining how the paper's evaluation was carried out. To sum up, I appreciate Timnit Gebru's actions because she obeyed workplace ethics and did not disrespect authority. If I were in her shoes, I believe I would have behaved similarly, but more patiently, to stabilise the issue and resolve it without making any impulsive decisions that might jeopardize my well-established job. On other hand, Google should have had justified the assessment and established transparency before jumping to the verdict of this controversial situation. Ethicists will indeed be important to the future of any company working on Artificial Intelligence during these periods of modernization, as they balance technology and ethics to prevent discrimination (Quinn, 2016).

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