

# The Impact of Generative Content on Individuals Privacy and Ethical Concerns

Ajay Sudhir Bale<sup>\*1</sup>, R. B. Dhumale<sup>2</sup>, Nimisha Beri<sup>3</sup>, Melanie Lourens<sup>4</sup>, Raj A. Varma<sup>5</sup>, Vinod Kumar<sup>6</sup>, Sanjay Sanamdikar<sup>7</sup> and Mamta B. Savadatti<sup>\*8</sup>

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**Abstract:** The rise of AI and ML-fueled generative content technologies has altered every stage of the content life cycle, from creation to distribution to consumption. There are many positive outcomes from these breakthroughs, but there are also serious ethical and privacy problems. The purpose of this work is to investigate the wide-ranging effects of generative content on personal data security and ethical considerations. The article dives into the privacy concerns that may arise from using generative material. Since this kind of technology depends heavily on user data, the ease with which accurate and tailored content may be generated raises concerns about data privacy. Unauthorized content synthesis, which may lead to the proliferation of bogus data, counterfeits, and other types of illicit tampering, is also a source of worry. We have attempted to consider all these implications and delve into them to bring out possible solutions. We are optimistic that this article will provide future insights into the research of generative content and its ethical considerations.

**Keywords:** Images, videos, generative AI, ethical, privacy

## 1. Introduction

Generative AI, an abbreviation for "Generative Artificial Intelligence," is a subset of AI approaches that uses a ML model to produce new material including text, pictures, audio, and video [1-2]. Generative AI, in contrast to more typical AI systems, is meant to develop imaginative and imaginative outputs that frequently mirror or emulate human-generated material, rather than relying on preexisting data to make choices or categories. In order to generate fresh material that is both cohesive and culturally important, creative AI models may learn designs and frameworks from enormous datasets [3-5]. Many of the models mentioned are constructed on top of DL

architectures like RNNs, CNNs, and, more recently, transformers. Over the last two years, several big generative models have been released, including ChatGPT and Stable Diffusion. To be more specific, these models are transforming a number of different fields by doing things like automatically making creative pictures and answering general questions. Therefore, these generative models have far-reaching consequences for the business and society at large, since they may lead to the elimination of various employment categories [6-9]. Generative AI can convert text to images using models such as DALLE-2, text to 3D images using models such as Dream fusion, images to text using models such as Flamingo, text to video using models such as Phenaki, text to audio using models such as AudioLM, text to other texts using models such as ChatGPT, text to code using models such as Codex, text to scientific texts using models such as Galactica, and so on. This effort aims to classify the most important recently released generative models and offer a brief description of the key industries impacted by generative AI [10-11]. Appropriate study, creation, and implementation of AI systems need careful consideration of their moral consequences. As AI develops and finds more applications in our daily lives, it raises a number of moral and social problems. Important ethical problems in artificial intelligence as depicted in Fig.1. This information is acquired from [12].

- Honesty and Prejudice: Artificial intelligence may produce biased or discriminating material if it is taught with flawed data.
- False information: Because of the prevalence of AI-generated material, it might be difficult to tell fact from

<sup>1</sup> Dept. of ECE, New Horizon College of Engineering, Bengaluru, India; ajaysudhirbale@gmail.com; ORCID ID : 0000-0002-5715-9739

<sup>2</sup> Associate Professor, AISSMS Institute of information Technology, Pune, India; rbd.scoe@gmail.com

<sup>3</sup> Professor, School of Education, Lovely Professional University, Phagwara; nimisha.16084@lpu.co.in

<sup>4</sup> Deputy Dean Faculty of Management Sciences, Durban University of Technology, South Africa; melaniel@dut.ac.za

<sup>5</sup> Assistant Professor, Symbiosis Law School (SLS), Symbiosis International (Deemed University) (SIU), Vimannagar, Pune, Maharashtra, India; raj.varma@symlaw.ac.in

<sup>6</sup> Associate Professor, M.M. Institute of Management, Maharishi Markandeshwar, Mullana-Ambala, Haryana, India 133207; ORCID - 0000-0002-3578-8155; gondi.vinod@gmail.com

<sup>7</sup> Instrumentation Department, PDEAS College of Engineering, Manjari Pune; sanjay.coem@gmail.com

<sup>8</sup> Dept. of ECE, New Horizon College of Engineering, Bengaluru, India;

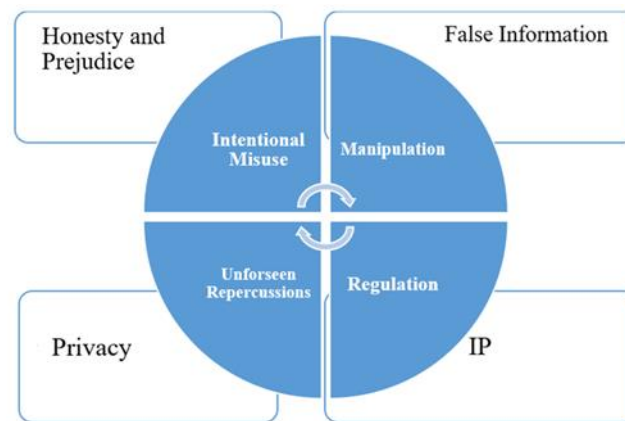
mamta.savadatti@gmail.com

\* Corresponding Author Email: ajaysudhirbale@gmail.com; mamta.savadatti@gmail.com

fantasy.

- **Privacy:** Information generated by generative AI may violate individuals' right to privacy since it may include details about them.
- **Intellectual Property (IP):** The copyright and intellectual property (IP) issues may arise from the fuzziness of authorship claims in AI-generated work.
- **Intentional Misuse:** It might be used to generate malevolent material, including spam, fraudulent reviews, or even cyberattacks on a large scale.

- **Manipulation:** It's possible that generative AI might be used to generate propaganda or other forms of propaganda designed to sway the public's views.
- **Unforeseen Repercussions:** Unforeseen effects of AI-generated material on fields like reporting, artistic endeavours, as well as jobs are possible.
- **Regulation:** The ever-changing nature of AI makes it difficult for legislation to follow up, thereby exposing the public to harm.



**Fig. 1.** Various ethical problems in artificial intelligence

Scientists, politicians, and AI enthusiasts must work together to set norms, openness, and protections to tackle these issues. The next section discusses in detail how these solutions can be practically implemented.

## 2. Related Work

This section deals with some of the cases that posed ethical issues in AI utilization.

The globe's most precious commodity has shifted from oil to data, according to *The Economist* in 2017. Since then, the line has become a refrain. Investing in analytics and data collection is a priority for businesses of all sizes and in all sectors. However, data and analytics aren't without their drawbacks, similarly to petroleum [13-14].

Since 2023, when LLMs made significant strides, the potential for change of generative AI has attracted attention from practically every sector. To foresee how generative AI has the potential to change the nature of employment in practically every sector of industry, OpenAI's ChatGPT has come to be at the core of this increase of attention. However, there is still a long way to go beforehand technology can accurately use over majority of company operations, as lawyer Steven A. Schwartz discovered in 2023 when he got in trouble with US District Judge P. Kevin Castel for using ChatGPT to look up legal precedents in a case he was bringing against Colombian

airline Avianca. The application of DL models for identifying the virus was investigated in a [15]. The method described in the research was deemed unsuitable for clinical use. Driggs' team, for one, discovered that their own model was incorrect since it had been built using data that contained both prone and upright patient images. Since patients who were laying down were more likely to be gravely sick, the algorithm learnt to determine whether or not a person was at risk for COVID depending on their position in the scan.

Zillow, a web-based property industry, informed investors in November 2021 that it will lay off 25% of its personnel, or around 2,000 people, over the course of the following three quarters in order to wind down its Zillow Offers business. When trying to estimate house values using a machine learning algorithm, the home-flipping unit experienced a high rate of mistake [16]. The Zillow Offers program made cash offers on homes using Zillow's own "Zestimate" house value estimates generated by a machine learning system. The plan was to immediately restore and sell the houses thereafter. A Zillow representative told CNN that the algorithm's typical mistake rate was 1.9%, but that for houses that aren't currently on the market, the number could be as high as 6.9%. According to CNN's reporting, since Zillow Offers' introduction in April 2018, the company has purchased 27,000 properties but has only sold 17,000 as of the end of September 2021. The program

has some problems with precision because of black swan occurrences like the COVID-19 epidemic and a dearth of workers available for house renovations.

Nearly sixteen thousand instances of coronavirus remained unreported between September 25 and October 2, 2020, according to data compiled by Public Health England (PHE), a UK government agency. Is this person responsible? Microsoft Excel's data constraints. The Public Health Service (PHE) employs an automated approach to import COVID-19 positive test findings from a.csv file into Excel templates for use in visualizations of data and tracking contacts. sadly, the maximum number of rows and columns per Excel worksheet is 1,048,576 and 16,384, respectively. In addition, PHE was not using rows but columns to record its cases. Excel truncated the bottom 15,841 entries when the number of instances surpassed the 16,384-column maximum. People who underwent testing still received their findings, but the "glitch" hampered the UK National Health Service's (NHS) ability to trace contacts of infected people and alert them. Interim PHE CEO Michael Brodie stated in a statement released on October 4 that the organization worked rapidly with NHS Test and Trace to rectify the problem and move all open cases into the organization's contact tracing system. In order to avoid future mishaps, PHE has implemented a "rapid mitigation" that divides huge files and has performed an exhaustive end-to-end evaluation of all systems [17].

High-risk care administration initiatives help keep persistently sick patients safe by providing them with nurses who have undergone specialized training and primary care supervision. However, white patients were far more likely to be suggested by the algorithm for these programs than black patients. According to the results, healthcare expenditures were employed as a surrogate for healthcare needs by the algorithm. However, Black patients with higher healthcare expenditures were given lower risk ratings than White patients with lower healthcare costs, despite the fact that Black patients' needs were greater, as reported by Scientific American. The study's authors speculated that a number of things may have been involved. To begin, even if they have health insurance, individuals of color are less likely to use it because of their lower wages. Low quality treatment for persons of color may also be the result of implicit prejudice. Researchers informed Scientific American they were collaborating with the program's creator to fix the problem, albeit neither the algorithm nor its creator were identified in the work [18].

Amazon, like many other major corporations, is on the lookout for recruitment screening software. In 2014, Amazon began developing recruitment algorithms driven

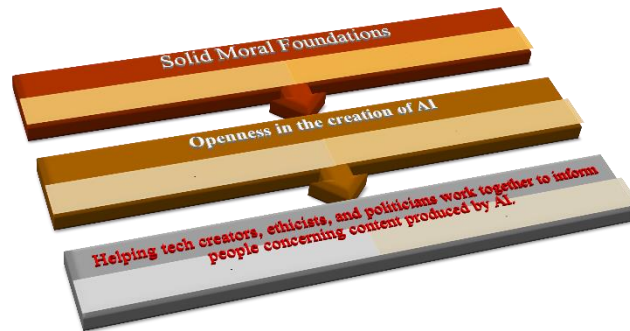
by artificial intelligence to do this. The only catch was that the system heavily favored male applicants. The fact that Amazon has abandoned the project was first reported by Reuters in 2018. Amazon's algorithm assigned ratings from 1 to 5 stars. However, the system's core machine learning models were trained on ten years' worth of resumes submitted to Amazon, the vast majority of which were from males. The algorithm began to penalize resumes including sentences containing the term "women's" and even applicants from all-female universities after being trained with this data. At the time, Amazon said that its recruiters never utilized the software in question. When the corporation realized it couldn't ensure the tool wouldn't be taught to use biased criteria when selecting applicants, it abandoned efforts to neutralize the software [19-20].

In 2012, retail giant Target demonstrated how much can be learned about consumers using data analytics. The New York Times reports that in 2002, Target's marketing team began pondering how the company might identify pregnant consumers. That line of questioning spawned the predictive analytics initiative that ultimately resulted in the infamous disclosure to the family of a pregnant minor by the store. It would then be referenced in several articles and marketing blogs as an example of how not to attract unwanted attention, or the "creepy factor." The marketing team at Target was on the lookout for expectant mothers since pregnancy is one of the few times in a person's life when they are likely to make significant changes to their usual shopping habits.

If Target could reach out to consumers at that time, it could be able to encourage them to shop at Target for food, clothes, and other necessities. Target, like most large stores, has been tracking its customers with the use of shopper IDs, credit card numbers, surveys, and other methods. It combined such information with its own demographic data and with data it bought from other sources. Target's analytics team crunched the numbers and found that of their many goods, there were around 25 that could be combined to form a "pregnancy prediction" score. High-scoring clients might then be singled out for special discounts and promotional offers from the marketing team. The examination of consumers' reproductive status may seem intrusive to some of those customers, as further investigation would show. The Times reports that the corporation did not abandon its targeted marketing strategy, but instead began interspersing advertising for products they knew pregnant women would not purchase (such as lawn mowers) with ads for diapers [21]. These problems can be provided with the solutions. These are discussed in the next section.

### 3. Methodology

This section emphasizes the solutions that are provided for the ethical issues posed by AI. The various issues reported above can



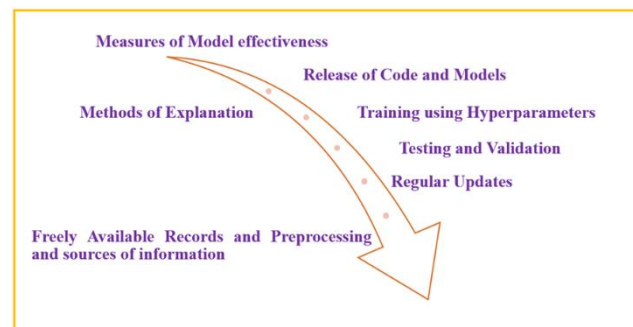
**Fig. 2.** Possible ways of tackling AI related issues

be provided the solutions using some of the ways reported (depicted in Figure 2).

Solid rules of ethics, openness in the creation of AI, user education on AI-generated material, and cooperation between technology creators, ethicists, and politicians are all necessary for addressing these issues.

#### A. Openness in the creation of AI

The goal of transparent AI development is to ensure that all parties involved in the creation of AI systems have access to and are informed by the same information. Some crucial characteristics of openness in AI research and development are as follows and depicted in Figure 3.



**Fig. 3.** Openness in the creation of AI

- **Freely Available Records:** By documenting the AI model's structure, computations, and training procedures in detail, you may help others comprehend the model's operation.
- **Preprocessing and sources of information:** User assessment of the AI system's biases and limits is aided by disclosure of training data sources, biases, and preprocessing methods.
- **Measures of Model Effectiveness:** The advantages and drawbacks of an AI system may be better understood by users if its results are made public.
- **Training using Hyperparameters:** Knowing exactly the algorithm has been optimized is facilitated by disclosing the hyperparameters utilized throughout training and the techniques for picking those.
- **Methods of Explanation:** Humans are better able to understand the reasoning behind an AI system's forecasts when clearness methods like characteristic significance, focus diagrams, and choice justifications are included.
- **Release of Code and Models:** If feasible, academics and others will be able to duplicate and verify the AI the system's performance if the source code and models that were trained are shared.
- **Testing and Validation:** Establishing the trustworthiness of an AI system requires detailing its testing and validation processes, particularly the data sets utilized for assessment.
- **Regular Updates:** Sharing information about the AI model's evolution with its users helps keep everyone on the same page about the system's present state.
- **Easy-to-navigate user interfaces:** Building confidence

and comprehension in AI is facilitated through user interfaces that reveal how the AI makes decisions.

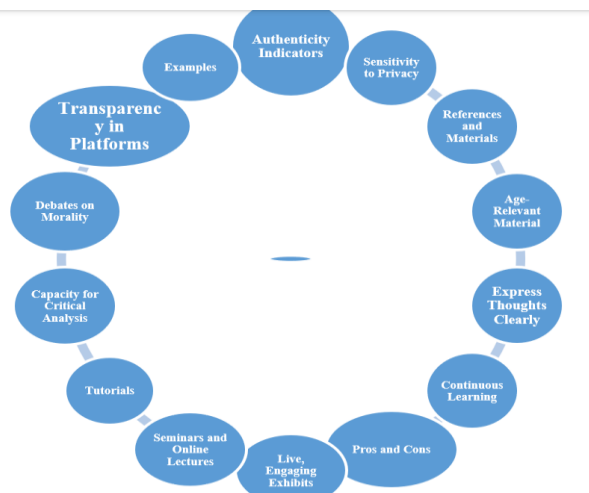
Confidence, cooperation, and responsibility are all bolstered by openness throughout the creation of AI. Users, academics, politicians, and the general public are given the tools they need to have productive conversations on how AI will affect society.

*B. Educating users about AI-generated content:*

This is very essential to help them understand its potential and limitations. Here's how to do it effectively: and is depicted in Figure 4.

- Express Thoughts Clearly: Describe AI-generated content, its creation process, and its uses in simple terms.
- Examples: Display actual works of art, writing, or music produced by AI to demonstrate its capabilities.
- Pros and Cons: Highlight the benefits of AI-generated material, such as creative aid, and discuss the hazards, such as disinformation and abuse, that may arise as a result.
- Authenticity Indicators: Urge consumers to check resources and inform them of the warning indicators which could indicate information was created by AI.
- Transparency in Platforms: Encourage platforms to disclose when content is AI-generated, so users can make informed decisions.
- Live, Engaging Exhibits: Offer interactive demos where users can experiment with AI tools and see the process firsthand.

- Seminars and Online Lectures: Hold discussions that go into the mechanics of AI content generation as well as its social ramifications.
- Tutorials: Give detailed guides on how to use various AI tools while explaining their advantages and disadvantages.
- Capacity for Critical Analysis: It is important to train people to critically evaluate AI-generated material prior adopting it as reality.
- Debates on Morality: Encourage dialogue on ethical issues, stressing the significance of moderate consumption of material created by artificial intelligence.
- Sensitivity to Privacy: Educate users about privacy concerns when using AI tools that require personal data.
- References and Materials: Please disseminate reputable studies, documents, and reports that investigate the effects of AI-generated material.
- Age-Relevant Material: Adjust the level of difficulty and scope of content to meet the needs of learners of varying ages.
- Continuous Learning: Make it clear that users are encouraged to keep up with the latest AI research and advances.



**Fig. 4.** Educating users about AI-generated content

Users may become more discriminating in their information consumption, making better decisions and helping to create a more ethical artificial intelligence environment if they have easy access to and thorough education regarding AI-generated material.

*C. More productive teamwork:*

In order to make ethical and creative strides in the field of

generative AI, it is essential that the community of its creators work together. The following is how this can be achieved.

- Open Research: Motivating developers to share their work publicly increases community openness and knowledge.
- Shared Datasets: Make available datasets for model

development and evaluation to programmers so that their efforts may be measured against the same set of data.

- Collaborative Workshops and Conferences: Create gatherings where programmers may debate problems, provide solutions, and exhibit their work.
- Communities and Forums on the Internet: Create online communities where programmers can talk shop, swap ideas, and work together on projects.
- Hackathons and Competitions: Create challenges that encourage the use of generative AI to address concrete issues, and watch the ideas and partnerships flow in.
- Collaborative Projects: Promote idea sharing through encouraging collaboration between developers from various companies.
- Research Partnerships: Collaborate with universities and other research groups to advance multidisciplinary study.
- Code Sharing: Make a central location for code, models, and pre-trained components to be shared by developers to speed up development and cut down on duplication.
- Interdisciplinary Collaboration: Make it easier for AI creators to work with ethicists, social scientists, and lawmakers so that everyone's concerns are heard.
- Standardization Efforts: Take part in efforts to create industry-wide standards for generative AI, such as uniform language and performance metrics.
- Peer Review and Feedback: The quality of R&D may be improved by encouraging developers to evaluate and offer comments on one another's work.
- Mentorship Programs: Create mentoring programs in which seasoned coders help train up the next generation.
- Ethics Discussions: Integrate moral questions and debates into teamwork to promote accountability in growth.
- Data Sharing Agreements: Create frameworks for sharing anonymized data, while respecting privacy and legal considerations.
- Commercial Collaboration: It would be beneficial for businesses creating generative AI tools to work together to solve problems and exchange experiences.

Developers of technology may successfully handle problems and moral dilemmas while also driving the accountable and constructive growth of generative AI if they promote an environment of cooperation, information sharing, and moral accountability.

#### 4. Discussion

Effective answers to the moral challenges faced by AI need cooperation among those who create technology, those

who determine policy, those who study ethics, and the general public. The key to maximizing the benefits of AI while reducing its drawbacks is to eliminate prejudice, guarantee fairness, safeguard privacy, encourage responsibility, and encourage openness. To ensure that the future of AI is both productive and accessible, it is essential that discussions on ethics continue to take place as the field develops. The content generation, distribution, and consumption processes have all been impacted by the emergence of generative content technology powered by artificial intelligence and machine learning. While these advancements have numerous useful applications, they also raise some very real ethical and privacy concerns. The goal of this study is to examine the far-reaching impacts of generative material on privacy and ethics. The work explores at the potential privacy issues of employing generative content. Concerns regarding data privacy are warranted because of the ease with which accurate and personalized material may be created with this sort of technology. Concerns also arise from the possibility that unauthorized content synthesis might lead to the spread of false information, counterfeit goods, and other forms of illegal manipulation.

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