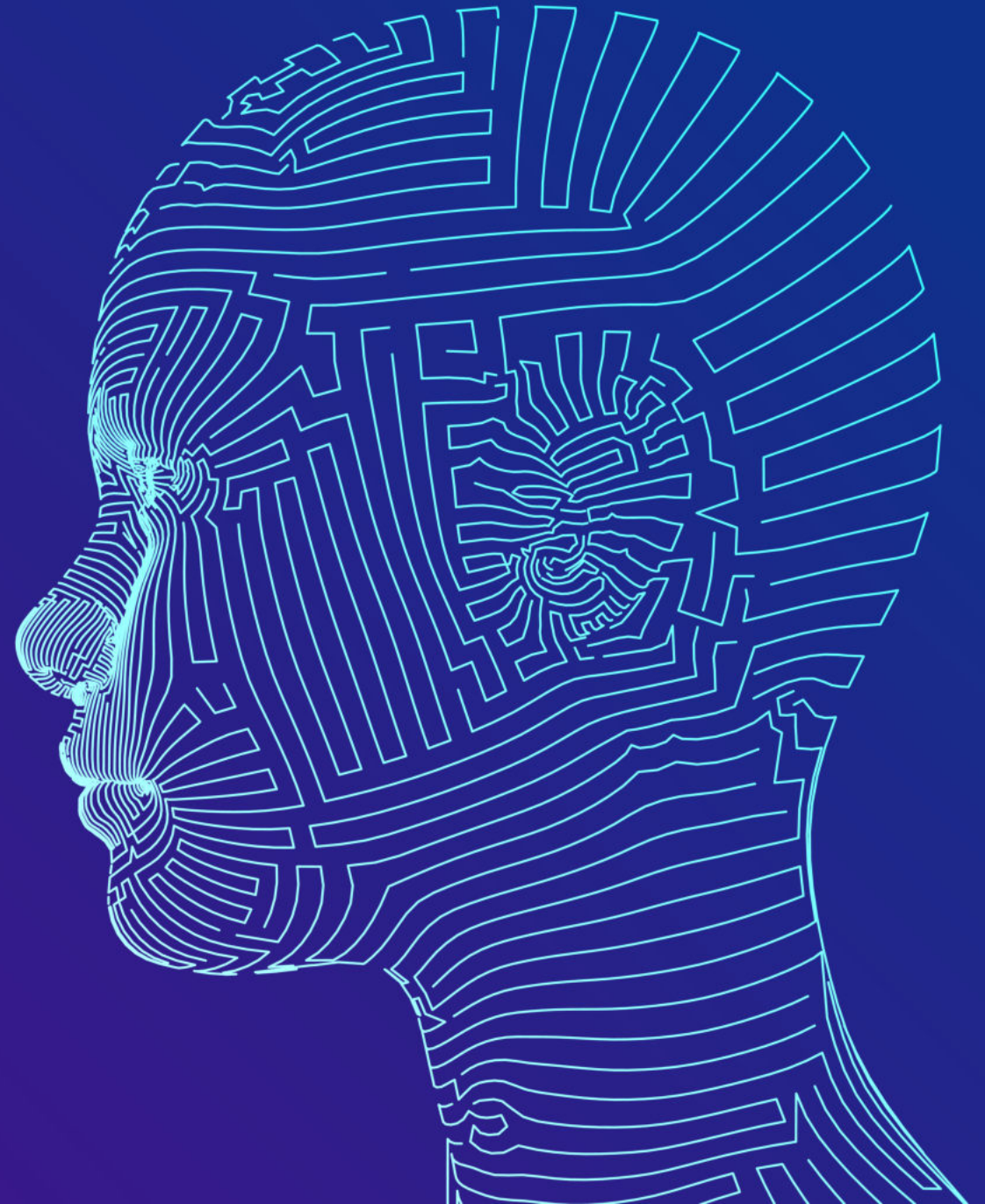


# GENERATIVE AI: BEYOND CHATGPT

As with any new technology, there are always different perspectives and opinions on its benefits and drawbacks. Generative AI, like ChatGPT, certainly has its strengths in creating new content and providing entertainment. It has the potential to revolutionize various industries, from gaming to marketing, and even scientific research.



# Gartner predicts

By **2025**, **30%** of outbound marketing messages from large organizations will be synthetically generated, up from less than **2% in 2022**.

---

Generative AI will enjoy **30%** of the total AI market share by **2025** and around **\$60 billion** of the addressable market.

---

Venture capital firms have **invested over \$1.7 billion in generative AI solutions** over the last three years, with AI-enabled drug discovery and AI software coding receiving the most funding.

# Trends in Generative AI

---

## Improved Natural Language Processing

Natural language processing (NLP) is one of the most exciting areas of generative AI. In the future, we can expect NLP models to become even more advanced, with the ability to generate more realistic and coherent language. This could have significant implications in language translation, content creation, and conversational AI.

## Increased Personalization:

Generative AI models will become even more adept at creating content and products tailored to individual preferences and needs.

## More Sophisticated Generative Models:

Generative models such as GANs and VAEs have shown remarkable results in generating realistic images, videos, and audio. In the future, these models will become even more sophisticated, with more complex and diverse outputs.

## Continued Advances in Computer Vision:

Computer vision models will become even more sophisticated, generating more realistic images and videos. This could have a profound impact on fields such as entertainment, advertising, and product design.

# Industry Use Cases for Generative AI

---

## Drug Design

Studies show that the average cost of taking a drug from discovery to market is about \$1.8 billion. Drug discovery costs about a third of the total cost and takes about three to six years. Generative AI has already been used to design drugs within months significantly cutting cost and time for drug discovery. It can generate data on millions of candidate molecules for a certain disease, then test their application, significantly speeding up R&D cycles.

## Synthetic Data

Dall-E, ChatGPT, MuseNet, and Jukebox are some examples of generative AI creating synthetic data. For Example, generative AI can personalize experiences, content, and product recommendations in consumer markets.

## Material Science

In a process called inverse design, generative AI is used to create entirely new materials based on specific physical properties. It is revolutionizing industries: automotive, aerospace defense, medical, electronics, and energy.

## Finance

These models can generate personalized investment recommendations, analyze market data, and test different scenarios to propose new trading strategies.

## Chip Design

Generative AI uses machine learning to optimize component placement in semiconductor chip design; reducing the product development lifecycle time from weeks to hours.

# Challenges of Generative AI

---

## Complex, resource-heavy implementation:

Building generative AI is a complex and iterative process requiring expertise in machine learning, data science, and software engineering. It requires significant computational resources and time to train the AI models.

## Data Leakage

Organizations have put policies in place forbidding employees from entering sensitive information into generative AI models, as it could be integrated into the model and made available to the public.

## Copyright Issues

Data used by generative models are drawn from the internet, which poses the question of whether the content created by the AI models infringes copyright laws.

## The ethical implications of generative AI

An AI system can generate new content that is difficult to distinguish from real content. There are opportunities for malicious intent: creating fake news or spreading disinformation. Concerns about how generative AI can manipulate people or invade their privacy are real.

## Hallucination

Generative AI can create data that sound convincing but are essentially wrong. Developers call it “hallucination”; limiting the reliability of these AI models.

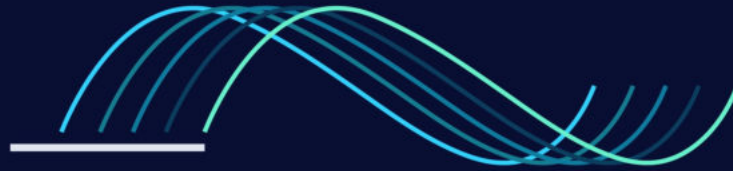
## The issue of bias and fairness in generative AI systems

If the training dataset used to develop the AI model is biased, then the generated content will also be biased. It can perpetuate stereotypes and discrimination and have real-world consequences.

## Lack of Transparency

As of today, there is no way to authenticate the content generated by generative AI models.

Overall, the future of **generative AI** is bright, with continued advances in natural language processing, computer vision, and generative models. However, as with any new technology, ethical and societal considerations need to be addressed to ensure that generative AI is used to benefit society as a whole.



# DIGITAL FABRIC<sup>®</sup>

THE TI FRAMEWORK

[INFO@DIGITALFABRIC.IN](mailto:INFO@DIGITALFABRIC.IN)