

Generative Artificial Intelligence (AI)

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Context- Rising applications and ethical concerns in Generative Artificial Intelligence (AI) have been witnessed.

Key Highlights

- Generative AI is a cutting-edge technological advancement type of artificial intelligence that involves creating new, original content or data using machine learning algorithms.
- The AI can be used to generate text, images, music, or other types of media.
- Generative AI works by training a model on a huge dataset and then using that model to generate new, previously unseen content that is similar to the training data.
- This can be done through techniques such as;
 - Neural machine translation,
 - Image generation, and
 - Music generation.

Applications of Generative AI

Revenue generation:

- Generative AI can craft sales, marketing, and brand messaging.

Blogging and reach:

- Agencies can also generate personalised social media posts, blogs, and marketing text and video copies by providing a text prompt to a Generative AI service, like ChatGPT.

Efficient communication:

- The service can quickly iterate several texts by simply tweaking the prompt to effectively communicate with the audience.

Logo and imagery:

- DALL.E, a generative image generation service, can generate original imagery to align with the branding.
- Many startups are exploring services such as DALL.E2, Bing Image Create, Stable Diffusion, and MidJourney to create their brand logo and to align the same with Generative AI text messaging.

Copywriter:

- Instoried is using Generative AI for marketers in order to become better copywriters.

Coding:

- GitHub, Copilot6 and ChatGPT1 can generate code and can also help with developer productivity.
- It can suggest entire functions, snippets, and even fully functioning modules and also generate code in real-time right in your editor.
- ChatGPT can help write code to build a technology service or integration quickly.

Synthetic Data:

- Generative AI can be used for generating synthetic data for data augmentation and creating additional training data to train and test AI models to experiment at scale.

Summary of data:

- It can sift through numerous legal research materials and also produce a pertinent, specific, and actionable summary.

Medical history and related important data:

- It can help health professionals with their medical diagnosis. AI can generate potential and alternative treatments personalized to patients' symptoms and medical history. For instance, DeepMind AlphaFold can predict the shape of protein.

Simplifying complex queries:

- ChatGPT can assist in providing answers to complex queries and augment search algorithms to generate responses to complex search queries.

Monitoring and reviewing:

- AI can be used to generate media reviews to help parents to monitor and steer their children's content consumption habits.

Complex design creation:

- AI can help create and simulate complex engineering, design, and architecture.

Testing:

- It can help speed up the iterative development as well as testing of novel designs.

Interior 3D Plans:

- Architecture, machine design, and house floor plans are all made by Generative Image and video technology.
- A Generative AI service, for instance, can let engineers as well as consumers design and iterate over floor plans and architectures with as little as a text prompt or vocal command.

Significance

- Generative AI has the potential to revolutionise many industries by automating the creation of content and enabling the generation of such new ideas and concepts.
- It can also reduce the countless hours of human research and enable them to focus on more complex and exciting problems.
- It has a variety of applications, all simplifying the job.

Concerns around AI use

- **Ethical:**
 - It constantly raises ethical concerns about the potential for biased or inaccurate content to be generated and disseminated.
- **Responsible Development:**
 - If not designed and developed carefully with appropriate safeguards, Generative AI can create harm and adversely impact society through misuse, perpetuating biases, exclusion, and discrimination.
- **Perpetuates biases:**
 - These systems can perpetuate and amplify existing biases and exclusion.
 - If the models are trained on biased, non-inclusive data, they will further generate biased outputs, such as offensive or discriminatory language, demeaning and degrading imagery, and prejudicial content.
- **Fake news & hate words or speeches:**
 - Generative AI systems can create content for malicious purposes, like deep fakes, disinformation, and propaganda.
 - It can generate offensive or inappropriate content.

- Nefarious actors may use AI-generated media for manipulating people and influencing public opinion.
- **Access to privacy:**
 - These systems can potentially access sensitive information, raising concerns about data privacy as well as security.
- **Incorrect data and diagnosis:**
 - It may produce low-quality and less accurate information, specifically in the context of complex engineering and medical diagnosis.
- **Accountability can not be fixed:**
 - It can also be challenging to determine who is responsible for the content generated by a generative AI system — the acquisition and consent model around the training data and intellectual property issues make it difficult to hold anyone accountable for any harm resulting from its use.

Way Ahead

- It is very important for developers and users of generative AI to consider the potential impacts and ensure that the technology is used ethically and responsibly.
- There should be rigour and responsibility to developing AI technology, enforce ethical guidelines, conduct regular audits for fairness, identify and address biases, and protect privacy and security.
- It is also important to carefully consider the potential harms, threats, and concerns of Generative AI systems and ensure that they are used responsibly and ethically.
- Countries need to add adequate policy, regulation, awareness, and education guardrails to develop and use Generative AI services ethically and responsibly.