



CURRENT AFFAIRS



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DEEPPAKES

What is DeepFakes? The effect of Deepfakes.

This article covers “Daily current events “ and the topic is ‘Deepfakes technology’ which is in news, It covers “ Science and Technology” In GS-3, and the following content has relevance for UPSC.

For prelims: Deep fake, Cyber Security, Artificial Intelligence

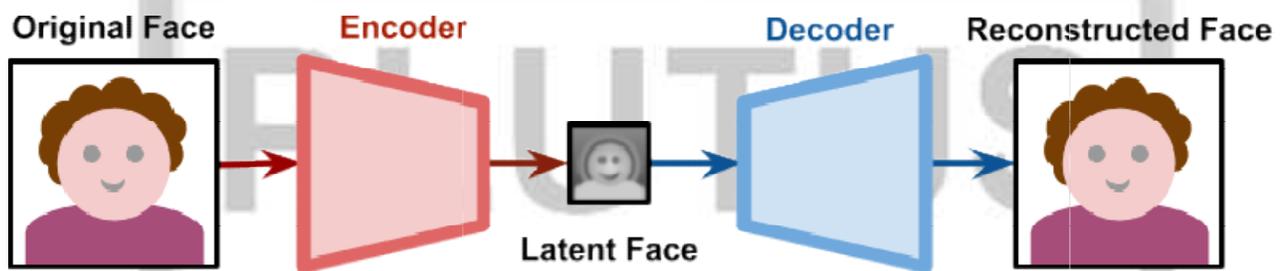
For mains: GS -3, Challenges associated with deep fake Technology

ABOUT DEEPPAKES

- Digital media such as video, audio, and photographs that have been artificially intelligently edited and manipulated are known as deep fakes.
- In essence, it is a hyper-realistic computer fabrication. **Deepfakes** are made to hurt people and organizations. A perfect storm has formed to democratize the production and manipulation of media thanks to the availability of commodity cloud computing, open-source.
- AI algorithms, copious data, and enormous media. Deepfakes are the name for this fake media content. The ease with which false information, celebrity pornography, etc. are distributed online has attracted attention.
- It creates a fake version of authentic or original audio-visual content by overlaying fresh audio or visuals on top of an already-existing media file.
- The number of deep fake movies online has nearly tripled in just nine months when the AI Company Deep trace found 15,000 of them in September 2019. Surprisingly, 96% of them were pornographic, and 99% of them resembled renowned women’s faces more than porn stars.

ITS WORKING PROCESS

- The generator and discriminator, two AI algorithms that compete with one another, are used to produce deep false content.
- The discriminator's job is to determine if the bogus multimedia content generated by the generator is fabricated or real.
- Together, the generator and discriminator form a generative adversarial network (GAN). Every time the discriminator correctly identifies the false material, it provides the generator with crucial information about how to improve the following deep fakes.
- Establishing a GAN begins with determining the intended output and producing a training dataset for the generator.
- When the generator's output starts to reach an acceptable level, video clips can be fed into the discriminator.



DeepFakes

Major victim:

- Deepfake's first instance of malevolent use was discovered in porn. Sensity.ai reports that over 135 million people have viewed sexual movies, accounting for 96% of deep fakes. Deepfake pornography only appeals to females. Threatening, intimidating, and psychologically damaging pornographic deepfakes are all possible. It turns women into sexual objects, which causes mental distress, and can also have indirect effects like job loss and financial loss.
- Deepfake can make someone appear to engage in deviant conduct and say deplorable things that they never would have. Even if the victim was able to disprove the hoax using an alibi or another method, the damage may have been done by that point.
- A malevolent nation-state might use Deepfake as a potent instrument to compromise public safety, sow doubt and turmoil in the target nation, and further its own agenda. Trust in institutions and diplomacy can be damaged by deep fakes.
- Non-state actors, such as insurgent groups and terrorist organizations, might utilize deep fakes to portray their enemies as making inflammatory comments or acting provocatively in order to incite anti-state feelings among the populace.
- Another issue with **deepfakes** is the liar's dividend, in which an unfavorable reality is discounted as fake news or deepfake. Deepfakes themselves provide more weight to denials than they otherwise would.

- Deep fakes, fake news, and alternative facts can all be used as weapons by leaders to attack legitimate media and the truth.

Concerns of deep fake:

- The financial system as a whole is affected by Deepfake's financial fraud.
- In the age of fake news, the security of cyber networks and the reliability of online information are also in jeopardy.
- People would find it harder to recognize a hoax if phishing attempts included deep fakes.
- Deep fakes can be used in any country to undermine democratic processes like elections.
- Since it may be used to create fake pornographic videos and make politicians appear to say things they did not, there is a significant potential for harm to individuals, groups, and societies.
- Because deep fakes are so common, the public is so skeptical that any legitimate evidence of a crime can be easily dismissed as false.
- As new technology makes it possible for unskilled individuals to produce sophisticated fakes using only a few photographs, fake movies are likely to grow in popularity outside of the world of superstars. This will encourage the development of revenge porn.
- In cybercrime, the use of false identities and imposter fraud is on the rise.
- Issues with authenticity and credibility: It is harder to tell whether videos are authentic or not when there are profound fakes present.

Advantages of Deepfake:

- GANs can be used to generate fictional medical images, which can be used to train illness detection algorithms for rare diseases and to assuage patient privacy concerns.
- The drive for accessibility to increase equity can be sped up with Deepfake.
- The discriminator gets better at identifying fake video clips as the generator gets better at creating them. As the discriminator gets better at spotting fake videos, the generator, on the other hand, gets better at creating them.
- Artificial general intelligence (AGI), which is currently under research, will enable artificial intelligence to reason more effectively in the future.
- Exhibits in galleries and museums can be animated by deepfake films.
- In instructional videos, AI avatars can be created utilizing deep-fakes technology.
- Startups like London-based Synthesia have been attracting more attention from the business sector as real-people video productions have become much more difficult to pull off due to lockdowns and health issues.
- Along with being utilized for entertainment and education, deepfake technology may be used to create custom avatars for each user.

- Uncomplicated identity protection For instance, in news coverage about the discrimination against LGBTQ people in Russia, interviewees' identities have been protected by AI-generated avatars.
- Using high-resolution deep fakes face-swapping technology, Disney has improved their visual effects as deep fakes technology continues to evolve.

Way ahead:

- As media consumers, we must be able to decipher, understand, translate, and use the information we encounter.
- Meaningful regulations created in collaboration with the technology industry, civil society, and the government can aid in preventing the creation and spread of malicious deep fakes.
- Deep fakes pose risks to the government, society, economy, culture, and local communities, which should be known by policymakers.
- Prior to resolving the issues deep fakes present, media literacy needs to be improved.
- The only method to deal with this problem is with technical solutions supported by artificial intelligence that can recognize and block deep fakes.
- Blockchains can be used to digitally sign and validate a video's or document's authenticity because they are resistant to a variety of security issues.

Piyush Singh

Financial Stability Report: by RBI

This article covers "Daily current events" and the topic is about the "Financial stability report" which is in news, It covers "Indian Economy and related issues" In GS-3, and the following content has relevance for UPSC.

For prelims: About Financial stability report

For mains: GS -3, Indian Economy and related issues

Why in News:

Recently, RBI released financial stability report.

MAJOR FINDINGS OF THE FINANCIAL STABILITY REPORT

- **Prospects for the world economy:** Due to the European conflict, the front-loaded normalization of monetary policy by central banks in reaction to chronically rising

inflation, and the several COVID-19 pandemic waves, it is veiled in a great deal of uncertainty.

- **A route to recovery:** The Indian economy is still recovering despite the difficulties caused by global spillovers, but inflationary pressures, foreign spillovers, and geopolitical threats need to be handled carefully and closely watched.
- **Capital buffers:** Financial institutions, including banks and non-banking, have enough capital buffers to withstand shocks.

Scheduled Commercial Banks' (SCBs') capital-to-risk-weighted assets ratio (CRAR) increased to a new high of 16.7% while their gross non-performing asset (GNPA) ratio dropped to a six-year low of 5.9% in March 2022. Banks now have the resources necessary to write off the majority of their problematic loans thanks to several waves of recapitalization.

Even more significantly, NPAs for industrial lending has dropped from 23% to 8.4%.

Even with these significant write-offs, the majority of banks still have adequate capital.

- Macro stress testing for credit risk has shown that SCBs would be able to meet the minimum capital requirements even under very stressful circumstances.

CONCERNS

- Broad averages mask a troubling picture, raising concerns about how bank credit will sustain GDP growth.
- The issue is that not much of this credit is being used to finance investments or large-scale industries.
- **Reduced bank credit:** Banks have gradually turned away from lending to industry over the past ten years in favor of lending to households.
- As a result, consumer loans have climbed from 19% to 29% of total banking credit, while the share of industry credit has decreased from 43% in 2010 to 30% in 2020.
- **High NPA concentrations:** Within a short period of time, credit doubled, largely as a result of funding for significant infrastructure projects.
- Many of those loans later went bad, resulting in significant NPAs on bank balance sheets.
- **Further basic issues:** As of yet, there is no framework in place to lessen the risk associated with private sector investments in infrastructure, especially not in the crucial and seriously problematic power industry.

Way ahead:

- The financial system received a largely unblemished report card from the report.
- Given the strain of the previous ten years, the pandemic's shock, and the ensuing economic slump, this performance is noteworthy.
- The improvement in banks' financials is a "glass half-full" scenario, nevertheless.
- It is yet unknown if the financial sector is strong enough to support the steady rise in credit required for a robust economic recovery.
- The financial sector's reach has been aided by technology, and its advantages must be fully realized.

Piyush Singh

