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Voice Deepfakes

Several users of the social media platform 4chan, used 'speech synthesis' and 'voice cloning' service provider, to make voice deepfakes of celebrities.

- A voice deepfake is one that closely mimics a real person's voice.
- The voice can accurately replicate tonality, accents, cadence, and other unique characteristics of the target person.
- Creating deepfakes needs high-end computers with powerful graphics cards, leveraging cloud computing power.
- AI can use this data to render an authentic-sounding voice, which can then be used to say anything.
- Attackers are using such technology to defraud users, steal their identity, and to engage in various other illegal activities like phone scams and posting fake videos on social media platforms.
- OpenAI's Vall-e, My Own Voice, Resemble, Descript, ReSpeecher, and iSpeech are some of the tools that can be used in voice cloning.
- Detecting voice deepfakes needs highly advanced technologies, software, and hardware to break down speech patterns, background noise, and other elements.
- Cybersecurity tools have yet to create foolproof ways to detect audio deepfakes.
- Multifactor authentication (MFA) and anti-fraud solutions can also reduce deepfake risks.

References

1. The Hindu - What are voice deepfakes and how are they used?

Google's Bard

Google will be opening Bard, an AI Chatbot, to trusted testers ahead of making it more widely available to the public in the coming weeks.

- Bard is Google's own conversational AI chatbot.
- Bard is based on Google's AI model, Language Model for Dialogue Application or Lambda.
- Google introduced LaMDA in 2021 as its generative language model for dialogue applications which can ensure that the Google Assistant would be able to converse on any topic.
- Bard is an experimental conversational AI service that draws on information from the web to provide fresh, high-quality responses.
- Bard will give in-depth, conversational and essay-style answers just like ChatGPT does right now.

- **Technology -** Bard is built on Transformer technology, which is also the backbone of ChatGPT and other AI bots.
- Transformer technology is a neural network architecture, which is capable of making predictions based on inputs.
- It is primarily used in natural language processing and computer vision technology.

Transformer technology was pioneered by Google and made open-source in 2017.

ChatGPT vs Bard

Features	ChatGPT	Bard
Data source	Draws its information from the data it has been trained on	Draws its information right from the Internet
Accessibility and Time	ChatGPT's sources end with 2021 data, cannot access real-time information from the Internet	Bard will continually draw information from the internet, so it will have the latest information
Language Model	Uses GPT 3.5	Uses its LaMDA
Content created	Single text prompt	Chunks of information
Limitations	Biased based on fed data	Biased based on uncensored internet

References

1. The Hindu - What is Google's Bard?
2. Business Today - Google's Bard vs Microsoft's ChatGPT

Vermin

The Wildlife Institute of India (WII) is working to develop immuno-contraceptive measures for population management of species that have become problematic for humans in many parts of the country.

- **Issue -** Nilgai antelope and wild boar have become a menace in many areas of India, destroying crops and causing human-animal conflict.
- The Union Ministry of Environment (MoEF&CC) approved the 10-year research project for developing the immuno-contraception in 2016.

- **Measure -** Reduce reproduction in the species by making the female sterile.
- This will be done by injecting a vaccine made from a hormone derived from the ovary lining of pigs.
- **Vaccine project -** The MoEF&CC had approved a project of Rs 10.65 crore for Wildlife Institute of India (WII), Dehradun, for vermin control.
- The project deals with population management of species involved in human-wildlife conflict.
- It includes a study on immune-contraceptive measures for population management of 4 species namely elephant, wild pig, Rhesus macaque and Nilgai.
- **Vermin Status -** The wild animals listed in ***Schedule V*** of the Wildlife (Protection) Act, 1972 are called Vermin.
- The vermin can be hunted or culled such as common crows, fruit bats, rats and mice.

The WLPA, 1972 currently has 6 schedules that assign varying degrees of protection to animals and plants.

- **WLPA,1972 -** The central government has the power to declare any wild animal, other than those specified in Schedule I and Schedule II as 'vermin' for any area and a specified period.
- **Criteria to be Vermin -** The wild animal ***should not*** be those specified in ***Schedule I*** and ***Part II of Schedule II*** of Wildlife (Protection) Act, 1972.
- The Wild Life (Protection) Amendment Bill, 2021 brings in a major change by reducing the number of schedules from six to four.
- Recent activity

Time	State	Animal
May 2022	Kerala	Wild boar
August 2022	Bihar	Nilgai and wild boar

References

1. Down to Earth - A vaccine to reduce 'vermin' populations

Milk Production

India is the highest milk producer in the world for the year 2021-22.

- The data of Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) revealed that India is the highest milk producer in the world.
- India ranked first position in the world contributing 24% of global milk production in the year 2021-22.
- The milk production of India has registered 51% increase during the last 8 years (2014-15 to 2021-22).
- The milk production of India has increased to 21 crore tonne in the year 2021-22.

Schemes for Dairy Development

- National Programme for Dairy Development (NPDD) was launched in February 2014 by merging 3 existing schemes
    1. Intensive Dairy Development Programme,
    2. Strengthening Infrastructure for Quality &
    3. Clean Milk Production and Assistance to Cooperatives.
- In July 2021, NPDD has been restructured for implementation from 2021-22 to 2025-26.
- NPDD aims to enhance quality of milk and milk products and increase the share of organised procurement, processing, value addition and marketing;
- **Fodder -** National Livestock Mission, Sub-Mission on Feed and Fodder Development is a separate scheme aiming to increase availability of fodder and feed.
- Supplementing the efforts of the State Government, Department of Animal Husbandry and Dairying has been implementing the following dairy development schemes:-
    1. National Programme for Dairy Development

2. Dairy Processing and Infrastructure Development Fund
3. Supporting Dairy Cooperatives and Farmer Producer Organisations engaged in dairy activities.

- The above schemes benefit farmer-members, including financially weaker farmers in the dairy sector.

References

1. PIB - Milk Production in India

Primary Agricultural Credit Societies

The Union Budget 2023 has announced Rs 2,516 crore for computerisation of 63,000 Primary Agricultural Credit Societies (PACS) over the next 5 years.

- Primary Agricultural Credit Societies (PACS) are village level cooperative credit societies.
- **3-Tier -** They serve as the last link in a three-tier cooperative credit structure headed by the State Cooperative Banks (SCB) at the state level.
- Credit from the SCBs is transferred to the district central cooperative banks (DCCBs) that operate at the district level.
- The DCCBs work with PACS, which deal directly with farmers.
- **Structure -** Since these are cooperative bodies, individual farmers are members of the PACS, and office-bearers are elected from within them.
- A village can have multiple PACS.
- **Credit -** PACS are involved in short term lending, known as crop loan.
- At the start of the cropping cycle, farmers avail credit to finance their requirement of seeds, fertilisers etc.
- **Interest -** Banks extend this credit at 7% interest, of which 3% is subsidised by the Centre, and 2% by the state government.
- Effectively, farmers avail the crop loans at 2% interest only.

> A report published by the Reserve Bank of India on December 27, 2022 put the number of PACS at 1.02 lakh with the lending worth was Rs 1,43,044 crore.

- The PACS is attractive for the last mile connectivity they offer.
- PACS have the capacity to extend credit with minimal paperwork within a short time.
- **Computerization -** PACS are not connected to the Core Banking Software (CBS) but some PACS use their own software.
- Computerisation of PACS has already been taken up by a few states, including Maharashtra.
- A compatible platform will bring uniformity in the system.

References

1. IE - what are primary agricultural credit societies?



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