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Deepfake Dilemma: A Profound Threat to Trust and Authenticity in Media and Society

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Abstract: *At a time when more and more applications and functionalities of artificial intelligence are being discovered, deepfake phenomena have become much more visible and, on occasions, a problem as well. The production of counterfeit visuals, movies, and audios that resemble real ones is one of the negative features of deep fake that may jeopardize a free society, citizens' privacy, and even national security. Coming into 2024, the whole world is still having to deal with the complicated repercussions and aftereffects of deep-fake technology and data manipulation. This paper attempts to shed some light on the area of deepfakes, trace their development, and examine their sweeping consequences for trust and authenticity in media and society. Besides, the paper tries to investigate the hidden agenda of creating deepfake videos, the use of technology, and identify solutions to limit their threats. The study encompasses, reports, and articles related to deep fake technology, its applications, and its societal and political impacts. The results shows that deepfakes can lead to psychological, financial and social harm, Study also indicates the positive impact of deep fake when used in art, academic and entertainment business.*

Introduction

Deepfakes are AI techniques

Deepfakes are AI techniques to create or edit movies, pictures, or audio recordings in such a way that they appear realistic but are either modified or totally synthesized. Deepfake algorithms, after being trained, synthesize realistic-looking faces for new content creation or edit old films by face switching, attitude, gesture, and lip movement alteration. This deep-fake technology can be used to create extremely realistic simulations of video or pictures, usually featuring famous people or public figures, for purposes spanning from pure entertainment to political parody to evil deeds like disinformation or libel. A deepfake is a type of synthetic media creation, often superimposed into pre-existing images, videos, or audio recordings with fabricated content, usually generated from AI algorithms. Deepfakes have become such a stunning feature within the modern-day information landscape, encompassing an extremely complex web of diverse uses, intended and unexpected consequences, and urgent countermeasures required to grapple with the new reality. Deep-fake technology is characterized by flexibility and versatility. Deep-Fakes have been misused for a wide variety of applications that span

from seemingly innocuous to outright hostile. The flip side is represented by the huge potential for the new technology within the entertainment industry, where, among other uses, it has been put to resurrect much-loved dead actors or to give life to fictional characters interactively. (Rössler et al., 2018).

Jacobson. N, (2024) in his article "Deepfakes and Their Impact on Society" states that Deep-fakes are synthetic media, often in the form of videos, audio, or images, generated through artificial intelligence (AI) and deep learning algorithms. These algorithms use vast datasets to change or replace existing content, seamlessly overlaying one person's likeness onto another. A similar, but perhaps not as widely recognized, form of deceptive media is shallow fakes, where instead of using AI, media is altered with simple editing tools. This process has reached a level of sophistication where it can be challenging to differentiate between genuine and fake content.

Telling lie or manufacturing lies are not a new phenomenon in human nature. Deep fake technology has accelerated this notion and have created unease for victims and over all whole society. From text to audio and portrait to moving picture AI (Deep Fakes tools) has made it possible to manipulate the way the created wants. Chesney, B., & Citron, D. (2019).

Dack, S. (2019). In his study *"Deep fakes, fake news, and what comes next"?* Published in May 25, 2018 illuminated that hyper realistic, false audio/ video produced by machine learning system quite difficult to identify. Machine has the capability to reshape information and make it real and no doubt that it is a real threat to society and democratic set-up.

A Deep-Fake refers to a synthetic media creation, often involving the superimposition of existing images, videos, or audio recordings with falsified content, typically driven by artificial intelligence (AI) algorithms (Kalpokas & Kalpokiene, 2022).

China:

Deep fake technology is also under considerable development and use in China. It is being used in entertainment, including the creation of digital idols and enhancing the media production. However, the Chinese government has implemented stringent regulations to control the creation and distribution of such fake videos created by using AI tools and spread misinformation or defaming individuals.

Europe:

In the case of Europe, deep fake technology has been met by a vigorous regulatory response. The European Union is already very much at the frontline when it comes to designing regulations in order to prevent deep fakes from being misused explicitly in political contexts and to protect individual privacy. However, technology is also put to creative use in arts and media.

India:

Deep fake technology is gaining momentum in India, with its applications running as far back as media, entertainment, and even in the creation of educational content. However, this demands caution against the growing misuse of technology, more so in regard to misinformation and defamation.

Pakistan:

The growth of deep fake technology in Pakistan is an emerging worry, mirroring global trends in the rise of such technologies. The technology is fast becoming easily available, just as in many other countries, aided by AI and machine learning. With the widespread use of smartphones, computers, and the internet, more and more people are using them in Pakistan; and some IT soft experts have used and created deep fake content. It has user-friendly software and programs, and its easy approach to the public is due to less regulatory control. Having less digital literacy rate, it is becoming more harmful as compared to useful. Deep fakes have been investigated on grounds of media and entertainment for

video production, voice-overs, and visual effects in Pakistan. This application, however, remains relatively limited in comparison to more developed economies. Meanwhile, a growing concern is the deep fake technology that has largely affected the political environment due to its use in the spread of fabricated content and defamation. However, the level of digital literacy varies, hence further affecting the ability of the public to identify it and understand its implications pertaining to deep fakes.

Consequences of Deep Fake Technology in Pakistan

Like many countries, Pakistan is wrestling with how to rein in deep fake technology—in its case, by legal frameworks with teeth for dealing with the misuses of deep fakes and initiatives that will educate people about the technology, how it can be used, and how to enable making a critical evaluation of media.

One of the basic fears concerning deep fakes is diffusion misinformation or deception and privacy violation, particularly in the political process. Governments, technology companies, and civil society groups worldwide are grappling with how to maximize the benefits of this technology while mitigating its risks.

Deepfakes technology used to make complicated counterfeit videos is becoming increasingly advanced, with major ramifications for administration and enterprises (Stanton. C, 2019). It is a big challenge to detect Deepfake. To protect the impact of deep fake in political and social environment European Union (EU) has taken remarkable measures to protect against all forms of disinformation, including Deepfakes.

The media authorities in Brussels also took precautionary measure and has taken a serious step to highlight Crime happened using AI. Government now making has made a plan to tackle disinformation spread through AI and take action against Deepfakes originators.

With the collaboration of lawmakers and business chambers of Congress have raised serious concerns about Deepfakes in the United States, Most recently, Representatives Adam Schiff and Stephanie Murphy, as well as former Representative Carlos Curbelo, wrote a letter to the director of national intelligence, asking him to investigate how foreign governments, intelligence agencies, and individuals could use Deepfakes to harm US interests and how they could be stopped. China a business giant in the world economy is closely watching AI development in West and generation of Deep Fake to damage the business across the border. For local consumption, Xinhua News agency, Part of China Media Group has recently tested with digitally generated anchors for it News slot.

This study will identify the gap concerning the situation of Deepfake in Pakistan and offer suggestion tackle the address the Gap. Pakistan has not taken an appropriate step in this regards.

As per Pakistani constitution, and the International Covenant on Civil and Political Rights (ICCPR) the freedom of expression is guaranteed in Article 19. This freedom has been extended to use artificial intelligence tools to create content. But at what cost? To protect privacy and it is important to impose restrictions through Laws and restrict crimes one like Deepfakes. Ameer, S. (2024, April 19).

Until now, Deepfakes have not been used to instigate violence or undermine elections. However, the technology to do so is accessible. That means that countries have an eliminating window of chance in protecting themselves against future Deepfakes before they cause a disaster.

Good and Bad of Deep-Fake Technology

Deep-Fake technology offers valuable applications in fields like film making and virtual reality, but its potential for misuse raises significant concerns. The manipulation of faces in images or videos poses a severe threat to global security, with far-reaching implications. Because the aces play a central role in human interaction so it is considered the most important biometric authentication and identity verification element (Chesney & Citron, 2019b).

Deep-Fakes can be yoked for positive drives. However, the negative effects arises when they are misused (Ismail et al., 2021).

Because of the negative implications of deepfakes which is production of west and now increasing being used in developing countries, researchers are exploring more and more and technology companies are also vigorously finding ways to detect and alleviate the impact of deepfake content.

Role of AI in Proliferation of Digital Media and Regulations

Today the As AI produced material has become very shared and common, particularly on social media platform so it is especially concerning in nations where people are politically or religiously divided, as the propagation of bogus content might be disastrous. For example, when a counterfeits video of a political leader being slain or an image of a specific ethnicity being attacked goes viral on networks like WhatsApp, it can generate violence and chaos.

To deal with the rapid technological race in producing unproductive and fake content a practical approach is imperative. Strict and need of timely and effective regulation by the government agencies must be placed on top priorities in their IT development agenda.

Ministry of Industry and Information Technology (MIIT), and the Ministry of Public Security (MPS (2023) issued a circular regarding cyber threat. China's recent has implemented it on 10 January 2023. The purpose I s to focus on integrating and regulating internet services while ensuring national security and protecting citizens' rights. Issued by CAC, MIIT, and MPS, they require deepfake service providers to comply with laws and obtain consent from content owners for AI-related use. The CAC oversees enforcement of the 25 articles, aided by local telecommunications, public security, and network information departments, which are tasked with monitoring compliance and inspecting deep synthesis operations.

Latham & Watkins LLP, 'China's New AI Regulations' (Client Alert Commentary Number 3110, 16 August 2023) https://www.lw.com/admin/upload/SiteAttachments/Chinas-New-AI-Regulations.pdf.

Human interactions through and faces identification

Human interaction depends greatly on recognizing faces, and this has become even more important in today's digital world where facial recognition is widely used for security, identity verification, and biometric authentication. Deep-fake technology creates serious risks because it can alter faces and voices so realistically that people may be impersonated, secure systems may be bypassed, and fraud can become easier to commit. Its uses range from harmless entertainment to harmful activities such as fake pornography, false news, identity theft, financial scams, bullying, extortion, and even terrorist propaganda. In Pakistan, deep fakes have become a growing concern, especially in politics and information warfare, where they can manipulate public opinion, spread misinformation, and reduce trust in digital media. At the same time, the technology has also been used creatively in art, film, and storytelling, showing that it has both positive and negative dimensions. For this reason, the study explores how deep-fake technology works, how it is being used in Pakistan, what dangers it creates, and what responses are needed to deal with it effectively.

The Truth in Political scenario and Deep Fakes of Pakistan

Deep-Fake technology has dramatically changed the political scene of Pakistan by becoming one of the potent tools of political manipulation. SYNERGIA FOUNDATION: Deep Fakes and truth May, 25, 2024, the proliferation of Deep-Fake videos took over as a concerning trend during the general elections in Pakistan. The incarcerated former Prime Minister, Imran Khan, from making any public appearance, even digitally.

In fact, all emblems linked with his party, the PTI, have been eliminated, including the widely used party

symbol of a cricket bat. The goal was to prevent public exposure to the role and its incarcerated leader, who has become a nemesis for the all-powerful military. The PTI's highly skilled team of IT professionals overcame this barrier by deploying AI-produced video of Mr Khan giving electoral speeches; AI had generated the voice. It offered his fans a renewed sense of faith that their leader was among them. This AI-generated campaign had outstanding outcomes. This provided energy the PTI supports and their hope that their leader was among them. The result of this AI-generated campaign was stupendous, with PTI emerging as the largest party despite credible reports of widespread rigging, which would have otherwise given it a 2/3rd majority.

Moreover, the influence of Deep-Fakes on the general elections can have lasting effects. The results of an election might be impacted by the manipulation of public opinion, potentially leading to the election of candidates who would not have succeeded in a fair and transparent contest. This, in turn, raises questions about the legitimacy of the elected government and its

National Security and Threats

Deep-Fake technology has heralded a time where disinformation assumes new dangerous forms, especially concerning the country's security. Terrorist groups in and outside the country have been making use of Deep-Fakes for coming up with good video content concerning their ideologies and recruitment of gang members. By morphing their leaders' visages onto convincing videos or changing their speech, these groups are attracting a larger viewership to further increase the propaganda area. In fact, modern technology allows for a perfectly authentic creation of video and audio recordings, further complicating counter-radicalization and monitoring of extremists, which has provided a threat to national security (Perach et al., 2023).

The complex intelligence theater of Pakistan requires information to the greatest degree of honesty and correctness. Deep-Fake technology adds more insecurity. If it was capable of misguiding security agencies and decision-makers by manipulating important intelligence data by making fake audio or video recordings, then certainly misinformation can lead to miscalculations, hence ruining diplomatic efforts in such a region with so many geopolitical tensions and sensitive national security interests. Therein lies the need to therefore urgently build the capability to authenticate data intelligence amidst Deepfake-driven distortions. There are indeed, several challenges in the domain of national security posed by Deep-Fake technology. Security agencies hence have to deal with the explosive evolution of Deep-Fake tools and techniques. As these tools more democratically and increasingly become available, so increases the misappropriation by malicious users. Threat mishandling with Deep Fakes may result in the loss of public trust in government institutions and create a general climate of uncertainty and fear. (Hassan et al., 2023: Anderson, 2017).

Without such a response to the challenges, the stakes are potentially huge and deeply troubling. There can be disruption of national stability since public discourse would be manipulated, intelligence information will be twisted, and the foothold of extremist groups will become more entrenched. Erosion of trust with national institutions and government agencies has immense impact on the security posture of Pakistan.

Societal Impact

The exponential growth of Deep-Fakes in Pakistani society has created a culture of misinformation that proves trust wrong to the hilt. Now accustomed to a deluge of digitally manipulated media, people have become lost in distinguishing truth from falsity. This has created a general feeling of skepticism towards all sorts of information, including even genuinely original information. Deceptive media can set people towards a perception that misdirects their decision-making. Such decisions will not be related to an

informed choice based on any point of view, be it politics or public health.

It resonates all the way down to the personal with Deep-Fake technology. Safeguarded by anonymity, family members, friends, and almost-friends may share manipulated content, through which trust and rapport would be unknowingly harmed. But in a heterogeneous country like Pakistan—rich in the tapestry of cultures, languages, and belief systems—Deep-Fakes propagate to incite communal tensions and animosities. This can fuel conflict by distributing manipulated content portraying people or communities in a bad light, thus adding to existing fault lines and undermining social cohesion. (Ahva, L, 2017)

Ethical Dilemmas

It is because of this that more recently in Pakistan also, Deep-Fake technology has become a go-to option for those who were looking at making some quick money or merely to settle personal scores. The fabricated content assumes wider dimensions and may range from defaming rivals to tarnishing the reputation of public figures to extorting money from people on the threat of their manipulated videos going viral. Such actions are not only a reprehensible affront to ethical behavior but may bring serious harm to victims, families, and livelihoods.

This has caused people to begin doubting what leaders say, or what they see in videos and audio clips (Ali et al., 2022). Doubt and suspicion have become part of our culture. Thus, when a politician speaks, people will begin to wonder if the speech was candid, or when one sees a video clip on the news, whether it is real. This works at variance with the furtherance of society in concerted efforts toward common goals, since trust underlies unity. This is a highly challenging problem to solve in Pakistan, with the presence of different communities and different personalities. Because people are not bound together by trust, it becomes hard to bond them into a single entity working for a common objective.

So, the use of Deep-Fake technology has made it more challenging for people in Pakistan to trust each other and the information they come across, which, in turn, hinders their ability to work together for a common cause.

Statement of the Problem

The growing misuse of deep-fake technology has become a serious concern in Pakistan, particularly in the areas of politics, public trust, national security, and social stability. Deep-fake videos, audio clips, and images are increasingly being used to spread false information, damage reputations, manipulate political narratives, extort money, and settle personal disputes.

In politics and now in financial institution, deep-fake content can mislead people, damage trust in leaders and institutions, and make it hard to know what is real and what is fake. Because of this, people may start doubting speeches, news reports, and online videos, which weakens public trust and makes social unity more difficult. In Pakistan, this problem is becoming more serious, but there is still not enough research or clear policy to deal with it properly. Legal protection, ethical rules, and enforcement measures are also still weak. That is why this study looks at the impact of deep-fake technology in Pakistan and stresses the need for stronger laws, ethics, and policy responses. Therefore, this study fills an important gap by exploring the impact of deep-fake technology in Pakistan and emphasizes to understand the impact of deepfake in a stronger legal, ethical context to repel this increasing digital threat.

Aims and Objective of Research

1. The research in question is driven by two overarching aims and objectives that collectively seek to address the evolving landscape of Deep-Fake technology in Pakistan.

2. Concerned agencies to find out Legislative solutions, and Law enforcement agencies to take strict measures against wrongdoers.
3. To formulate a robust and context-specific legal and ethical framework tailored to address the Deep-Fake challenges observed within Pakistan.

Literature Review

According to Coulter.S (2024), Deepfake technology has emerged at a critical juncture for electoral democracies globally. The sluggish economic performance of many established democracies, not least the UK, has fermented significant disillusionment with democratic institutions. Increasing numbers of populist movements, which valorise common sense and reject technocratic 'elitism', have rallied criticism against traditional informational gatekeepers – the mainstream media, the academy and established political parties. In turn, the ubiquity of social media platforms as a means of communication has democratised the process of information exchange, further weakening gatekeeper institutions, and creating new avenues for misinformation and disinformation. Professor Graham Meikle explains that deepfakes land in this environment like a 'dirty bomb' and have the potential to weaken the already precarious situation of many democracies globally.

Fake Audio/videos and created through AI tools and their use on social media targeting the people who never said that what has shown or utter is during their election campaigns is a big concern for media regulators. Public interest groups and members of Congress have urged the Federal Election Commission (FEC) to take action on Deepfakes, but there has been no consensus on whether to do so. There is currently legislation in Congress to address the issue, however some of them exacerbate constitutional issues by being overly expansive and relying on criminal punishments. Neither parliament has passed a bill addressing Deepfakes in elections. (Painter, Richard W, 2024; Hassan et al., 2023)

Creating fake videos and images that look real has been around for a long time, but "Deepfake" became popular in the 2010s. It started with an app called "Faceswap," which lets people swap faces in videos and pictures. People interested in this technology used neural networks, like GANs, to play with face swapping and simple video changes. These early experiments set the foundation for making Deep-Fake technology better. (Miskys et al., 2019)

The technology got better and faster because GANs improved. GANs could create high-quality images, videos, and sound that looked very real. These GANs have two parts: one makes fake content like images or videos, and the other tries to tell if the content is real or fake. (Xuan et al., 2019) All software used in Ddeepfake technology are quite smart that it can (Korshunov & Marcel, 2018)

Deep-Fake detection & Learning techniques

To trace the In Deep-Fake, Experts, scholars and governments agencies are actively working to minimize Deepfake consequences. In a recent study by (Yu et al., 2021)they introduced a method that's good at finding even the tiniest details in real and fake pictures. He used different attention mechanisms to focus on different parts of the images. This allowed their computer model to focus on small, specific picture details.

Many different ways are in practice and suggested to track back fake images, but they are not very good at recognizing new tricks that fake image makers come up with. These techniques, like the ones mentioned in a study by (Akhtar et al., 2020), which tested models like SqueezeNet, VGG16, ResNet, DenseNet, and GoogleNet, work well when they have seen a specific kind of fakery before. However, if you throw them a new type of fakery they have not been trained on, they do not do so well (Szegedy et al., 2015)

Deep-Fake videos use special technology to make fake faces that look like real people. (Mirsky & Lee,

2021). The study conducted by (Rana et al., 2022), examined the eyebrows to find fake videos. They used different computer methods like Light CNN, Resnet, DenseNet, and SqueezeNet to help them. They found the best results when using these methods, with scores called AUC of 0.984 for one dataset and 0.712 for another. It is like giving grades to see how good they are at finding fake videos

2.2 The Role of Social Media in Boosting Deep-Fake Technology

By posting selfies or videos on the internet, we let ourselves fall prey to a technological system that is famously referred to as Deep-Fakes. The said feature could manage to edit our pictures and videos and have it seem like it was us who said or did something we never did. So how can we protect ourselves from this? One would be by not posting our photos or videos online at all. You can encumber the image with obstacles, for instance, waving your hand, or even cover part of your face in an image or video. If you do share it, makes the work on Deep-Fake creator hard. To oppose such content being used against you (Solsman,2019). The most prescient action required is around holding the social media companies to account for their impact in spreading the falsified or manipulated content. These platforms have been misused to spread misinformation quickly, and they currently benefit from legal privilege from accountability for whatever is posted by their users. It is time to revisit and perhaps amend such legal privilege.

Deepfakes are not only instruments for fun or amusement; they are equal to using a very strong weapon for deceiving public opinion and breaking trust in our public institutions. These, therefore, are recordings—videos, photos, or news reports—that might be used against public figures' reputations, their careers, and other forms of social welfare activities. For example, Deep-Fakes could see a politician engaging in corruption activities, using racist statements, or confessing to a crime they did not commit. Such malicious Deep-Fakes have potential to destroy a politician's career.

In light of the potential applications and misuse of Deep-Fake technology it is crucial to emphasize the role of the legislative and regulatory framework. Notably, there is no specific mention of Deep-Fakes in Pakistan's current civil and criminal laws.

Ismail, A., at el, (2021) in Article Published on Bloomberg webpage on February 21, 2022. Under the heading *Pakistan Toughens Law on Fake News on Twitter, Facebook* stated that in an apparent attempt to crack down on journalists and government opponents, Pakistan strengthened laws to limit posts on social media platforms such as Twitter Inc. and Meta Platforms Inc.'s Facebook. The President of Pakistan, Arif Alvi, was quoted as saying that he had approved an act to alter the nation's Prevention of Electronic Crimes Act, allowing anybody to report a social media post. Additionally, the minister of law stated that propagating false information online would no longer be punishable by bail, extending the act's prison sentence from three to five years.

Besides, following laws could potentially be adapted to address the legal consequences associated with the use of Deep-Fake technology. Personal Data Protection Bill, 2023 is good initiative but not fully speaks about defamation.

Pakistan's legal framework does not explicitly address Deep-Fake technology, existing cyber laws, and the forthcoming Personal Data Protection Bill, 2023, can be adapted and relied upon to tackle the legal challenges arising from using Deep-Fakes in the country. The sections, particularly section17 address various rights and responsibilities concerning personal data.

Law and Consequences of Using Deep-Fake in Pakistan

The Prevention of Electronic Crimes Act, of 2016 plays a pivotal role in addressing various cybercrimes, including those related to Deep-Fake technology (Jouini et al., 2014)

Apart from PECA, Section 25 which deal with 'Right to Prevent Processing Likely to Cause Damage' Section 26 – Right to Erasure, Section 29 Right to Data Portability and Automated Processing are applicable to tackle the addresses the issue related to Defamation caused by Deep-Fakes+

Victims of Deep-Fake Technology and How We Can Protect Them

Many social media networks lack specific policies addressing the issue of Deep-Fake content. However, there is a promising trend as these companies gradually adopt a more responsible approach to handling user-shared content. Notable social media networks like Facebook and Instagram and respected news agencies such as the Wall Street Journal and Reuters are taking proactive steps to combat the spread of false, misleading, or fake content. They do this by relying on the assessments of third-party fact-checkers (O'Sullivan, 2019).

According to (Murphy & Flynn, 2022), specially designed 3D-printed glasses can be used to protect against Deep-Fakes. These would be the kind of features that could embolden or distort the facial recognition technology that would be going into Deep-Fake creation, in turn making it harder for the actors creating it to Deep-Fake a person. These glasses would be like a physical countermeasure to Deep-Fake attacks. Chadha et al., 2021, underline the capacity that high anti-Deep-Fake technologies based on the mammalian auditory system are likely to unleash. For example, mice were demonstrated to be capable of detecting inconsistencies in audio that humans are not. It exemplifies the manner in which this knowledge could be turned into the development of an auditory-based anti-deep fake solution through which to detect inconsistencies within the audio content to create an additional layer of protection against Deep-Fake manipulation.

Research design

This study adopts a qualitative research design to examine the issue of deep-fake technology in Pakistan. Under this approach, the researcher will conduct interviews with selected participants and carefully document their responses in order to identify the major themes emerging from the data. These themes will then be analyzed in depth to understand the nature, use, and impact of deep-fake technology within the Pakistani context. In addition to primary data collected through interviews, the study also draws on secondary sources such as scholarly literature, newspaper reports, websites, and content from print, electronic, and social media platforms. Relevant material published between 2019 and 2023 has been reviewed to explore how deep fakes have been discussed in the media and what responses have been suggested to address them.

The study is conducted in Pakistan, as this setting provides an appropriate socio-political and cultural environment for examining the misuse, consequences, and possible countermeasures related to deep-fake technology. To strengthen the analysis, selected literature from other Asian countries and parts of the West is also considered for comparative understanding.

Data Analysis and Finding

Key Findings

The findings of the survey offer some general insights into the way participants view and use Deepfake technology. Among the points brought out are:

Emotional and Psychic Effects

The survey inquired into the emotional labyrinth to trace the far-reaching impact of Deep-Fake encounters on participants' psyches. Nuanced responses were from anxiety to confusion, with an air of distrust. There is already a difficult situation with an important amount of 'digital masquerade' made by the Deep Fake, where it turns a hard task into the responsibility of any single individual to make out the original from the manipulated version.

4.3 Need for Regulation:

The concern for prevention is voiced in the survey—putting up barriers against malicious use and creating a shield to protect the people from the unintended consequences of the Deep-Fake game. Table. The following is a tabular list of four deep fake cases each in Pakistan, India, and the USA, with elaborations concerning the case together and references.

Date	Country	Case Description	Reference
June 2019	USA	A deep fake video of Facebook CEO Mark Zuckerberg discussing data control went viral.	**Source**: *BBC News* link
September Nov, 202319	India	A deep fake video of an Indian actor in a compromising position was circulated online.	**Source**: *Times of India* link
October 2020	Pakistan	A deep fake video showing a Pakistani politician making controversial statements was widely shared.	**Source**: *Dawn* link
November 2020	USA	A deep fake of Speaker Nancy Pelosi appeared intoxicated in a video that circulated online.	**Source**: *CNN* link
November 2020	India	A deep fake video of an Indian politician making inflammatory statements circulated during election campaigns.	**Source**: *India Today* link
December 2020	Pakistan	A deep fake video purportedly showing a Pakistani journalist in a compromising situation was widely shared.	**Source**: *Dawn* link
March 2021	USA	Deep fake videos of actor Tom Cruise went viral on TikTok, showcasing the potential and dangers of the technology.	**Source**: *The Guardian* link
April 2021	India	A deep fake video of a prominent Indian celebrity endorsing a fraudulent scheme surfaced online.	**Source**: *Hindustan Times* link
June 2021	Pakistan	A deep fake video falsely portraying a Pakistani activist in a defamatory light was circulated on social media.	**Source**: *The News* link
August 2021	USA	A deep fake video of former President Barack Obama insulting political opponents went viral.	**Source**: *The Verge* link
January 2022	India	A deep fake of an Indian cricketer making derogatory comments about a rival team was shared widely.	**Source**: *ESPN* link
February 2022	Pakistan	A deep fake video targeting a Pakistani government official with false allegations surfaced online.	**Source**: *Geo News* link

Case Explanations:

Table: International Case Studies of Deepfake Incidents

Country	Date	Description	Significance	Reference
USA	June 2019	Viral deepfake video of Facebook CEO Mark Zuckerberg claiming control over users' stolen data.	Raised concerns about misinformation and misuse of deepfake technology.	BBC News
USA	November 2020	Deepfake video of Speaker Nancy Pelosi altered to appear	Highlighted threats to political figures and public	CNN

		drunk by slowing her speech.	perception.	
USA	March 2021	Deepfake videos of actor Tom Cruise on TikTok performing random acts.	Demonstrated advanced capabilities of deepfake technology and potential misuse.	The Guardian
USA	August 2021	Deepfake video of former President Barack Obama insulting opponents (created for awareness).	Warned about potential misuse of deepfakes despite educational intent.	The Verge
India	September 2019	Deepfake video of an Indian actor in a compromising situation circulated online.	Highlighted threats to personal reputation.	Times of India
India	November 2020	Deepfake video of an Indian politician making inflammatory statements during elections.	Showed risks to political stability and misinformation spread.	India Today
India	April 2021	Deepfake video of a public figure used in an online scam.	Demonstrated use of deepfakes in fraud and financial crimes.	Hindustan Times
India	January 2022	Deepfake video of an Indian cricketer making derogatory remarks went viral.	Indicated potential to create conflict in sports.	ESPN
Pakistan	October 2020	Deepfake video of a Pakistani politician making controversial statements circulated.	Showed use of deepfakes in political manipulation.	Dawn
Pakistan	December 2020	Deepfake video of a Pakistani journalist in a compromising situation shared online.	Highlighted character assassination and personal vendettas.	Dawn
Pakistan	June 2021	Deepfake video targeting a Pakistani activist to discredit them.	Demonstrated use in smear campaigns.	The News
Pakistan	February 2022	Deepfake video falsely accusing a government official circulated online.		

Discussion and Conclusion

Recent advancement in the field has not proved as effective and the field needs more research to bridge the gap. It was observed that The screening or filtering mechanism using effective detection methods can be implemented on these platforms to ease the Deepfakes detection, Legal requirements can be made for tech companies who own these platforms to remove Deepfakes quickly to reduce its impacts, In addition, watermarking tools can also be integrated into devices that people use to make digital contents to create immutable metadata for storing originality details such as time and location of multimedia contents as well as their untampered attachment.

Legal Framework: Pakistan has cybercrime laws under the Prevention of Electronic Crimes Act (PECA), which can potentially be used to address issues arising from deep fake technology. However, the law's

application to deep fakes specifically is still evolving. Awareness Campaigns: There is a need for more public awareness campaigns and educational initiatives to help people recognize and critically evaluate deep fake content.

Overall, while deep fake technology in Pakistan is still in its early stages, the potential consequences are significant, prompting a need for proactive measures to address the associated risks. To protect this hilarious crime various Machine Learning and Deep Learning-based techniques are in use. Amongst these CNN and LSTM has proved to be more accurate in the classification of the videos. Government of Pakistan should give more power to FIA to train their staff and use latest machines to detect deepfakes and related crimes.

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