What is Deep Fakes – and How We as a Society Should Deal With It

Deepfakes, as the name suggests, takes its roots in deep learning mechanisms that use neural networks to learn patterns and faces. Fake videos that contain altered facial features and body movements of a person have been circulating the internet in the form of fake news, adult and comedy content, and sometimes political scares.

Deepfakes are also synonymous with disinformation that can lead to political and social instability. As a society, we need to be trained, in both personal and professional capacity, to look out for doctored media, and be wary of anything that can compromise privacy and public anonymity.

Deepfake a dark side of **Artificial Intelligence.** And a yes, quite an insidious one!

Simply put, **Deepfake** is a technique of employing **Artificial Intelligence** to create realistic, fake alterations to photo, audio, or video content.Existing images, videos, and voice records are processed with *machine learning algorithms* to superimpose them onto the source content and produce a fictional result that appears real.

The blend of “deeplearning” and “fake”, deepfakes are super-realistic videos that are digitally manipulated to portray an individual saying and doing things that actually never happened. Deepfakes depend upon neuralnetworks that analyze huge datasets to learn imitation of a person’s facial expressions, behaviorism, voice, and sounds.

Deepfake marks social media platforms first because of rumors, conspiracies, and misinformation circulated very easily there and users favor to go with the crowd.

The bad news is that not only companies, corporations, and celebrities should be wary but ordinary people as well.

Imagine, for example, that you receive a video call from a colleague asking for details about a top-secret product your team is working on. What if the call turns out to be a deepfake initiated by your competitor? It would totally break down whatever competitive advantage you were hoping to get from the launch of the new product. Not to mention that the revelation could place your career in jeopardy.

Here are just some of the Deepfake implications:

- Loss of reputation
- Career collapse
- Financial fraud
- Mental disorders

On the one hand, artificial intelligence can provide many benefits for many areas of our lives. On the other hand, it can spawn totally new, dangerous things like deepfakes that require new ways to fight against AI cybercrime.

Here a few examples:

1. Deepfake Detection Challenge from Facebook is going to spend $10 million the best algorithms to instantly detect deepfakes.
2. Defense Advanced Research Projects Agency (DARPA) spent $68 million on inventing solutions to detect deepfakes.
3. In the USA there are two new pieces of legislation designed to prevent harm associated with AI-based fictions.

Let's face it, the developers from all over the world are puzzled with creating machine learning algorithms to tackle this problem.*Unfortunately, those who make money with Deepfake are also on the alert.*

My advice is - do not trust everything that you see or hear and strengthen the cybersecurity system;)

Deep fakes can currently be detected through analysis using various methods. Sometimes using AI to "combat" the AI that created it.

Fighting Deepfakehas been announced worldwide.I think governments around the world should intervene hard: banning development of the technology, recruiting all the people who know about this stuff to alter the software so that there are tells and tricks to understanding the video's and discovering who made them. If the technology seeps through the sieves set up to slow/stop it tactically as a matter of policy an independent source should record all major debates and where a deepfake is detected with the help of social media and internet companies delete the video, imprison the author and replace it with the real video.

Colonel Inderjeet Singh

Chief Cyber Security officer, Vara Technology Pvt Ltd

Colonel Inderjeet Singh is the Chief Cyber Security Officer and Head of the Cyber Security Center of Excellence at Vara Technology. In this role, he is instrumental in building the Cyber Security Business Unit for the Group. He is working on the disruptive technologies in the Cyber Security Space for securing IT networks, Smart cities and Critical Information Infrastructure.

He served in the Indian Defence Forces, is Alumnus of IIT Kharagpur and Symbiosis Institute of Management, Pune. He is an experienced Information Systems professional with experience of more than 27+ year across wide spectrum of areas spanning Information Security, Risk Management, Cyber Security, Cyber Forensics, Cyber Warfare, Cyber Terrorism, Expertise in SOC and CERT, Internet of Things (IoT) including IoT Security, Blockchain and Cryptonomics, Machine Learning and artificial Intelligence and Smart Cities.

He has held prestigious appointments while in Indian Army and has been CIO of E-Commerce Company. He has also served in United Nation Mission in Democratic Republic of Congo.

He is visionary for Start-Up Incubation, Entrepreneurship Development, Strategic Consulting and New Technology Evaluation for commercial viability. He is a Subject Matter Expert on latest innovative Technological domains and effectively managed mission critical projects

He has consistently delivered mission-critical results in the field of in Information Security Management, Cyber Security, Cyber Warfare and Cyber Risk Management.

He is a Council Member of CET (I) and fellow of IETE, IE, Member CSI and Executive Council Member Society for Data Science, Member Information Systems Audit and Control Association (ISACA), IEE, ISOC,IOT for Smart Cities Task Force (IoT4SCTF),Cloud Computing Innovation Council of India (CCICI), Internet Engineering Task Force (IETF), USI and many other professional bodies.

He has been consistently been awarded while in Army and was awarded **"Magnificent CIO of the Year "Award in year 2016 and Excellence Award in Cyber Security by International Police Commission in 2019.**

Colonel Inderjeet Singh

Chief Cyber Security officer, Vara Technology Pvt Ltd