# Examining Digital Media

Ensure the following are considered,

- Was the provenance of the image, video or audio verified?

- Was it explained how the media was supplied and given details about the device used for capture, and whether the media has undergone any form of editing, enhancement, copying, compression, or storage?

- Can you clearly see and hear the activity of interest? Is the depiction shaky or obstructed? Is the audio noisy? Is additional media available to provide other angles, lighting, or additional audio?

- What is the purpose of the media? Consider if the duration of the video provides a clear understanding of what occurred before and after it was taken. Consider the source of the digital media, which may help with making a judgment about intent. Digital media can have a complex lifecycle, and provenance is key.

# Terminology for Digital Media

Some of the technical terms professionals use when discussing deepfakes:

**Provenance:** The ability to trace the development or complex lifecycle of digital media as they progress through various editing or manipulation stages.

**Authentic:** Media having a verified and undisputable provenance.

**Authenticate:** Deciding whether an item is authentic, based on someone providing evidence of the media's provenance.

**Deceptive / Forgery:** Any visual or audio depiction that, when viewed or listened to by a reasonable person, is indistinguishable from an authentic version.

**Synthetic and Partially-Synthetic:** Technically altered in some manner, in whole or in part, through human-directed changes or by an AI algorithm.

When digital media is claimed to be a deepfake, it should be authenticated in order to certify whether the media (in whole or in part) is synthetic or not. During the authentication process, the provenance of the digital media shall be determined. As a separate but related line of reasoning, the investigation can proceed to examining whether or not the digital media is also deceptive or a forgery, which can include any combination of synthetic, repurposed or traditionally edited steps. In situations where digital media is a copy (or a copy of a copy), this does not imply that the media is fake or inauthentic, even if it is perhaps of lower quality. Low quality media can also arise from how it has been stored or compressed in prior steps of its lifecycle.

# Is This a Deepfake?

This is an introductory guide to synthetic, repurposed, and deepfake digital media (images, audio, video, etc.).

The term "deepfake" is widely used in the news, pop culture, academic, scientific, and legal discussions of digital media. The purpose of this document is to help make you aware of some of the nuances of deepfakes as they pertain to authentic and synthetic digital media and introduce useful vocabulary for discussing deepfakes.

A key point that is not addressed is intent. Especially as it relates to use of digital media for free expression, humour or spreading misinformation, it is not easy to determine the intent behind the editing or synthesis of a digital media item.

## Contexts of Digital Media

Not all alterations are nefarious in nature. Digital media can be manipulated, repurposed, or synthesized to influence human perception and behavior. For example, photo editing can be done for creative or artistic purposes. Audio can be edited from an existing recording to remove background noise. Some of these contexts cut across uses that are beneficial/creative, nefarious/illegal, or belong to a gray area. Such gray areas may not be illegal, but may misrepresent the original depiction.

# Lifecycle of Digital Media

Lifecycle of Digital Media shows how a simple image uploaded to the internet can be transmitted and shared, and each step offers potential for alterations from the original. Many alterations may affect the context of the media.

Sent a copy of image to friend.

Friend posted on Facebook.

Friend reposted on Facebook.

**Digital media editing** is the process of working with technology to modify an image, video, or audio. Deepfakes or repurposed media can be edited too.

**Original image from camera.**

**Provenance** is the ability to trace the development or complex lifecycle of digital media as they progress through various editing or manipulation stages.

The image was **edited** and the background was replaced.

**Repurposed/ Rebroadcast** media can be used to change the interpretation of associated content.

Material originally of a different location, time or subject will change the viewer's interprettion of the media, creating a false narrative.

Someone replaced the original photo with a **deepfake** (completely synthetic).

The edited version was posted on Instagram.

**Someone repurposed a completely different image from a prior year and claimed it was the original image.**

**Deepfake** (synthetized media) is visual, auditory, or multimodel content that has been artificially generated or modified.

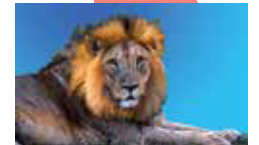Someone posted on Snapchat with a new text narrative.

Many downloaded the image from Instagram.