

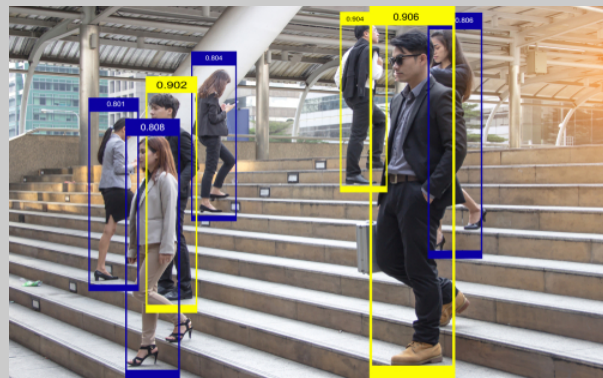


SUMMER 2021 E-NEWSLETTER

At Digital Mountain, we assist our clients with their electronic discovery, computer forensics, cybersecurity, and data analytics needs. For this E-Newsletter, we discuss collection, processing and presentation of audio and video evidence as well as its usage in court proceedings to impact the outcome of your case.

Audio and Video Evidence Growth Presents Technical Challenges and Opportunities for Discovery

One of the first pieces of video evidence presented in a courtroom was, apparently, forgotten until the early 2010s, when an archivist working at the British Film Institute made a serendipitous discovery – a film canister with the word “Evidence” written on it. Inside was a grainy black and white film of a group of street-gamblers running a betting ring. The archivist conducted research and found that the film had been introduced as evidence in a British courtroom – in 1935



(<https://www2.bfi.org.uk/news-opinion/news-bfi/features/1930s-hidden-camera-footage-first-film-used-evidence-uk-courts>). For context, in 1935, Franklin D. Roosevelt was President of the United States, the Marx Brothers filmed *A Night at the Opera*, and Elvis Presley was born. Fast forward almost a century, the ubiquity of cell phones, CCTV, and body-worn cameras has resulted in the exponential growth of audio and video evidence in legal matters. Although accurate statistics are difficult to verify because forms of trial evidence are not tracked in a single database, we can extrapolate the near universality of audio and video evidence from a survey that found that 94% of respondents indicated that video evidence was “critical” (<https://input-ace.com/wp-content/uploads/2021/05/2021-Video-Evidence-Trends-Report-Final-3.pdf>). The technical ins and outs of audio and video evidence are also growing at a dizzying pace, and the use of experts often becomes necessary. Indeed, whether it’s extraction, redaction, export, or storage, one mistake can render the evidence as useless as a grainy, old, black-and-white celluloid film.

One of the first technical hurdles to clear when obtaining audio and video evidence is to preserve the integrity of the data from the original source when converting it to a useable form. These days there are a vast number of solutions that capture audio and video evidence. In fact, more than thirty formats have been developed for video files. The popularity of those formats has varied over time – meaning that the most common video format used today may not be the same as the one we’ll see in two years. Considering that civil cases and any appeals can last years, courtroom

playback systems may change during the lifetime of an action requiring digital forensic experts to overcome many potential decoding and reformatting issues. Additionally, preserving the data is not as simple as knowing the original file format. Video files are almost always a bundle of data types assembled in a *container* – and if not carefully handled, data loss can occur. In a video file container, the audio data will often be layered into the container as a separate file, as will synchronization information, subtitles, and metadata. All of these elements need to be preserved before any preparation for presentation in court begins. Once the raw video has been extracted and is in a useable form, then we have to consider editing for appropriate use.

Audio and video evidence must pass the same tests for admissibility to which other forms of evidence are subject. One of the most common forms of editing for audio and video evidence is redaction. This utilizes software applications and associated hardware, which allow for digital forensic examiners to edit audio and video assets for quality, extraneous content, and privacy reasons. The most familiar use of video redaction is to obscure or hide the faces of those persons who appear in a video, but by law or preference, should not be seen or identified. For example, uninvolved minors or victims whose identities are being withheld, or elements that are irrelevant or distract from the salient portions of the content. For audio redaction tools, one of the most recognized uses of the technology is the elimination of personally identifying or confidential information captured as part of the recording. The enhancement of sound clarity would be a close second.

Audio and video redaction tools have benefitted from the advancement of other Artificial Intelligence (AI) based technologies, such as facial recognition tools. By teaching an algorithm to recognize, track, and redact faces or entire bodies from video, developers have been able to enhance the capability of redaction tools. The ability to locate and follow a target as it moves through frame after frame of video enables the development of automated video redaction technologies, which claim to reduce the amount of time required to edit video files. AI enhances the process of redacting audio recordings with transcript-enabled editing options. Audio recordings can be edited by a linked transcript of the audio data, which also allows for keyword searches within the transcripts. Provided the linked transcript is accurate, the redaction of audio files can be very precisely achieved.

The degree to which the automation is successful can vary, especially when working with darker skin tones and when the quality of the original video source is less than optimal. In an ideal environment with an experienced technician, the process of automatic video redaction can reduce the overall time and cost traditionally required to properly extract, redact, and export the material for use. Accurate hashing and logging of revisions are extremely important at all steps of preparing audio and video evidence in order to prevent any question regarding the authenticity of evidence. The examiner preparing the video should be careful to ensure that the redaction is complete and accurate, i.e., everything that is meant to be edited is fully redacted for the duration of the video before exporting a file. The same is true for incidental speech or background noises recorded in audio clips – the examiner must be sure that any automated functions employed in the preparation are set properly and then reviewed for accuracy. Examiners not familiar with the various layers of frequency and how to redact them independently may end up wiping relevant content. Incomplete and/or overly aggressive redactions are a hallmark of novice technicians who either didn't properly conduct an automated redaction or worked frame-by-frame or audio bit-by-bit manually redacting, but didn't pay close attention when reviewing.

There are significant technical challenges that arise when preparing audio and video evidence for presentation in court. Litigation outcomes heavily rely on judges and juries seeing and hearing

critical evidence. Extracting evidence from the source without data loss, preparing evidence for presentation, and making sure that the final product is the highest quality is critical to achieve the optimal result. However, handing a thumb drive or a mobile device to your IT specialist, no matter how experienced that person is, could be a risky, time- and resource-consuming proposition. Instead, trusting an experienced and knowledgeable expert with access to the right tools may be the best call you can make.

Please direct questions and inquiries about electronic discovery, computer forensics, cybersecurity, and data analytics to info@digitalmountain.com.

UPCOMING INDUSTRY EVENTS

BLACK HAT USA 2021

Las Vegas, NV: July 31, 2021 - August 5, 2021

CVENT CONNECT 2021

Las Vegas, NV or Virtual: August 1-4, 2021

TECHNO SECURITY & DIGITAL FORENSICS CONFERENCE

Denver, CO: August 2-4, 2021

ABA 2021 ANNUAL MEETING

August 4-10, 2021

ILTACON 2021

Las Vegas, NV: August 22-26, 2021

[Click here to see more upcoming events and links.](#)



Digital Mountain, Inc. Founder and CEO, Julie Lewis, will be presenting at various upcoming industry events. Please send requests for speaker or panel participation for her to marketing@digitalmountain.com. In the short term, she is available for webinars and remote e-conferences.

DIGITAL MOUNTAIN, INC.

4633 Old Ironsides Drive, Suite 401
Santa Clara, CA 95054
866.DIG.DOCS

www.digitalmountain.com

Contact us today!

FOLLOW US AT:

