DOWNLOAD PDF DESKTOP DIGITAL VIDEO PRODUCTION

Chapter 1 : Gulf Coast State College | Digital Media/Multimedia Video Production, C.C.C.

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History[edit] Starting in the late s to the early s, several types of video production equipment that were digital in their internal workings were introduced. This made it easier to either correct or enhance the video signal, as in the case of a TBC, or to manipulate and add effects to the video, in the case of a DVE unit. The digitized and processed video information was then converted back to standard analog video for output. Later on in the s, manufacturers of professional video broadcast equipment, such as Bosch through their Fernseh division and Ampex developed prototype digital videotape recorders VTR in their research and development labs. Like standard 2" Quad, the audio on the Ampex prototype digital machine, nicknamed by its developers as "Annie", still recorded the audio in analog as linear tracks on the tape. None of these machines from these manufacturers were ever marketed commercially. Digital video was first introduced commercially in with the Sony D1 format, which recorded an uncompressed standard definition component video signal in digital form. Component video connections required 3 cables and most television facilities were wired for composite NTSC or PAL video using one cable. Due this incompatibility and also due to the cost of the recorder, D1 was used primarily by large television networks and other component-video capable video studios. In , Sony and Ampex co-developed and released the D2 digital videocassette format, which recorded video digitally without compression in ITU format, much like D1. But D2 had the major difference of encoding the video in composite form to the NTSC standard, thereby only requiring single-cable composite video connections to and from a D2 VCR, making it a perfect fit for the majority of television facilities at the time. D2 was also widely used in that era as the master tape format for mastering laserdiscs. PACo could stream unlimited-length video with synchronized sound from a single file with the ". Audio Video Interleave from Microsoft followed in Initial consumer-level content creation tools were crude, requiring an analog video source to be digitized to a computer-readable format. While low-quality at first, consumer digital video increased rapidly in quality, first with the introduction of playback standards such as MPEG-1 and MPEG-2 adopted for use in television transmission and DVD media , and then the introduction of the DV tape format allowing recordings in the format to be transferred direct to digital video files using a FireWire port on an editing computer. This simplified the process, allowing non-linear editing systems NLE to be deployed cheaply and widely on desktop computers with no external playback or recording equipment needed. The widespread adoption of digital video and accompanying compression formats has reduced the bandwidth needed for a high-definition video signal with HDV and AVCHD , as well as several commercial variants such as DVCPRO -HD, all using less bandwidth than a standard definition analog signal. These savings have increased the number of channels available on cable television and direct broadcast satellite systems, created opportunities for spectrum reallocation of terrestrial television broadcast frequencies, made tapeless camcorders based on flash memory possible among other innovations and efficiencies. Overview[edit] Digital video comprises a series of orthogonal bitmap digital images displayed in rapid succession at a constant rate. In the context of video these images are called frames. Since every frame is an orthogonal bitmap digital image it comprises a raster of pixels. If it has a width of W pixels and a height of H pixels it is said that the frame size is WxH. Pixels have only one property, their color. The color of a pixel is represented by a fixed number of bits. The more bits the more subtle variations of colors can be reproduced. This is called the color depth CD of the video. An example video can have a duration T of 1 hour sec , a frame size of x WxH at a color depth of 24 bits and a frame rate of 25fps. This example video has the following properties: The formulas relating those two with all other properties are: The first half contains only the odd-numbered lines of a full frame. The second half contains only the even-numbered lines. Those halves are referred to individually as fields. Two consecutive fields compose a full frame. If an interlaced video has a frame rate of 15 frames per second the field rate is 30 fields per second. All the properties and formulas discussed here apply equally to interlaced video but one should be

careful not to confuse the fields per second rate with the frames per second rate. Properties of compressed video[edit] The above are accurate for uncompressed video. Because of the relatively high bit rate of uncompressed video, video compression is extensively used. In the case of compressed video each frame requires a small percentage of the original bits. Assuming a compression algorithm that shrinks the input data by a factor of CF, the bit rate and video size would equal to: In practice they are not, so CF is the average factor of compression for all the frames taken together. The above equation for the bit rate can be rewritten by combining the compression factor and the color depth like this: So in the case of compressed video the formula for bit rate is: Bit rate and BPP[edit] By its definition, bit rate is a measure of the rate of information content of the digital video stream. In the case of uncompressed video, bit rate corresponds directly to the quality of the video. Bit rate is proportional to every property that affects the video quality. Bit rate is an important property when transmitting video because the transmission link must be capable of supporting that bit rate. Bit rate is also important when dealing with the storage of video because, as shown above, the video size is proportional to the bit rate and the duration. Bit rate of uncompressed video is too high for most practical applications. Video compression is used to greatly reduce the bit rate. BPP is a measure of the efficiency of compression. Constant bit rate versus variable bit rate[edit] As noted above, BPP represents the average bits per pixel. There are compression algorithms that keep the BPP almost constant throughout the entire duration of the video. In this case, we also get video output with a constant bit rate CBR. This CBR video is suitable for real-time, non-buffered, fixed bandwidth video streaming e. As not all frames can be compressed at the same level, because quality is more severely impacted for scenes of high complexity, some algorithms try to constantly adjust the BPP. They keep it high while compressing complex scenes and low for less demanding scenes. This way, one gets the best quality at the smallest average bit rate and the smallest file size, accordingly. When using this method, the bit rate is variable because it tracks the variations of the BPP. Technical overview[edit] Standard film stocks such as 16 mm and 35 mm record at 24 frames per second. For video, there are two frame rate standards: Digital video cameras come in two different image capture formats: Interlaced cameras record the image in alternating sets of lines: One set of odd or even lines is referred to as a "field", and a consecutive pairing of two fields of opposite parity is called a frame. Deinterlaced cameras records each frame as distinct, with all scan lines being captured at the same moment in time. Thus, interlaced video captures samples the scene motion twice as often as progressive video does, for the same number of frames per second. Progressive-scan camcorders generally produce a slightly sharper image. However, motion may not be as smooth as interlaced video which uses 50 or Digital video can be copied with no degradation in quality. No matter how many generations of a digital source is copied, it will still be as clear as the original first generation of digital footage. However a change in parameters like frame size as well as a change of the digital format can decrease the quality of the video due to new calculations that have to be made. Digital video can be manipulated and edited to follow an order or sequence on an NLE, or non-linear editing workstation, a computer-based device intended to edit video and audio. More and more, videos are edited on readily available, increasingly affordable consumer-grade computer hardware and software. However, such editing systems require ample disk space for video footage. The many video formats and parameters to be set make it quite impossible to come up with a specific number for how many minutes need how much time. In comparison to the high cost of film stock , the tape stock or other electronic media used for digital video recording, such as flash memory or hard disk drive used for recording digital video is very inexpensive. Digital video also allows footage to be viewed on location without the expensive chemical processing required by film. Also physical deliveries of tapes and broadcasts do not apply anymore. Digital television including higher quality HDTV started to spread in most developed countries in early s. Digital video is also used in modern mobile phones and video conferencing systems. Digital video is also used for Internet distribution of media, including streaming video and peer-to-peer movie distribution. Many types of video compression exist for serving digital video over the internet and on optical disks. The file sizes of digital video used for professional editing are generally not practical for these purposes, and the video requires further compression with codecs such as Sorenson, H. As of [update] , the highest resolution demonstrated for digital video generation is 35 megapixels x The highest speed is attained in industrial and scientific high speed

cameras that are capable of filming x video at up to 1 million frames per second for brief periods of recording.

Chapter 2 : blog.quintoapp.com: Video Production: Books

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Chapter 3 : Desktop video - Wikipedia

If you are searched for a book Desktop Digital Video Production (Prentice Hall Imsc Press Multimedia Series) by Frederick Jones in pdf format, then you have come on to the faithful site.

Chapter 4 : Daily Southtown

You won't be able to get started in digital video production without a camcorder. There are many different types of camcorders, and which kind you buy depends on the type of digital video productions you plan to use it for. Whether you need a special computer for your digital video productions again.

Chapter 5 : Desktop Digital Video Production

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Chapter 6 : Build A Monster Computer for Video Editing & Post Production

This video is an entry for Oregon FBLA Digital Video Production, following the theme: Using a popular cover song as a starting point, create a parody music video that will.

Chapter 7 : Digital video - Wikipedia

Our North Douglas FBLA chapter is proud to present our entry for the FBLA Digital Video Production category. We've spent several hours in production and.

Chapter 8 : The Beacon-News

Video Production If you're looking to create your own monster post-production machine for less, then you'll definitely want to check out these links! Many tech-savvy post-production people have experimented with building their own monster Hackintosh or Windows machines.

Chapter 9 : Hartford Courant

Post-production of video and film is some of the most demanding work a computer can be called on to perform. Whether it is adding special effects and CGI, editing timelines and cropping footage, or rendering finished video to different formats, these creative endeavors really put computer hardware to the test.